AMERICAN

JANUARY • 1956

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



In This Issue . . .

- Photographing Pre-production Tests
- New Method of Insert Cinematography
- Techniques of Color Photography and Printing

25c

FOREIGN 35c



Production Chief Jim Rose (left) and George J. Stoetzel, A.S.C., Director of Photography, go over details of shooting schedule. Mr. Stoetzel, with over 27 years' experience in photography here and in Europe, says, "I've used all types of film and feel Du Pont is far superior."



Rex Marshall prepares to give filmed TV commercial. Du Pont "Superior" 2, with delicate tonal register and wide latitude, will present the sponsor's product at its best.



Discussing technical aspects of Du Pont Motion Picture Film are Jim Rose, Joe Dougherty, Du Pont Technical Representative, George Stoetzel and Assistant Cameraman George Kamsler.

"For TV film with that live, 3-dimensional look we use Du Pont 'Superior' 2!"

says **JIM ROSE,** *Production Chief, Vidicam Pictures Corporation, New York City*

"Thousands of dollars are involved in making a one-minute TV commercial, and we have to be sure the motion picture film we use will do the best job. That's why Du Pont 'Superior' 2 is our choice for all black and white footage here at Vidicam," says Production Chief Jim Rose.

"After viewing some rush jobs we completed recently, I was convinced that 'Superior' 2 provides the finest quality, depth and roundness I have ever seen in television reproduction!

"Our work is mainly TV commercials, although we shoot sales and industrial films," continues Mr. Rose. "We do a great deal of appliance photography, in which most items are dead white. Flesh tones of a model would go dark if the film didn't register middle tones accurately . . . another instance where Du Pont 'Superior' 2 turns out an exceptional job."

George Stoetzel, A.S.C., veteran Director of Photography, adds, "I know I can always count on 'Superior' 2 to capture those vital middle tones that I need in every commercial." Mr. Stoetzel continues, " 'Superior' 2 provides excellent gradation together with good speed. This lets us use a variety of lighting arrangements without danger of overexposure."

Take advantage of the many fine qualities of Du Pont Type 926 "Superior" 2 Motion Picture Film in your own work! It's an all-purpose film for both exterior and interior shooting, combining good speed, wide latitude and fine grain.

FOR MORE INFORMATION, write or call the nearest Du Pont District Office (listed below) or the Du Pont Company, Photo Products Department, Wilmington 98, Delaware. In Canada: Du Pont Company of Canada Limited, Toronto.

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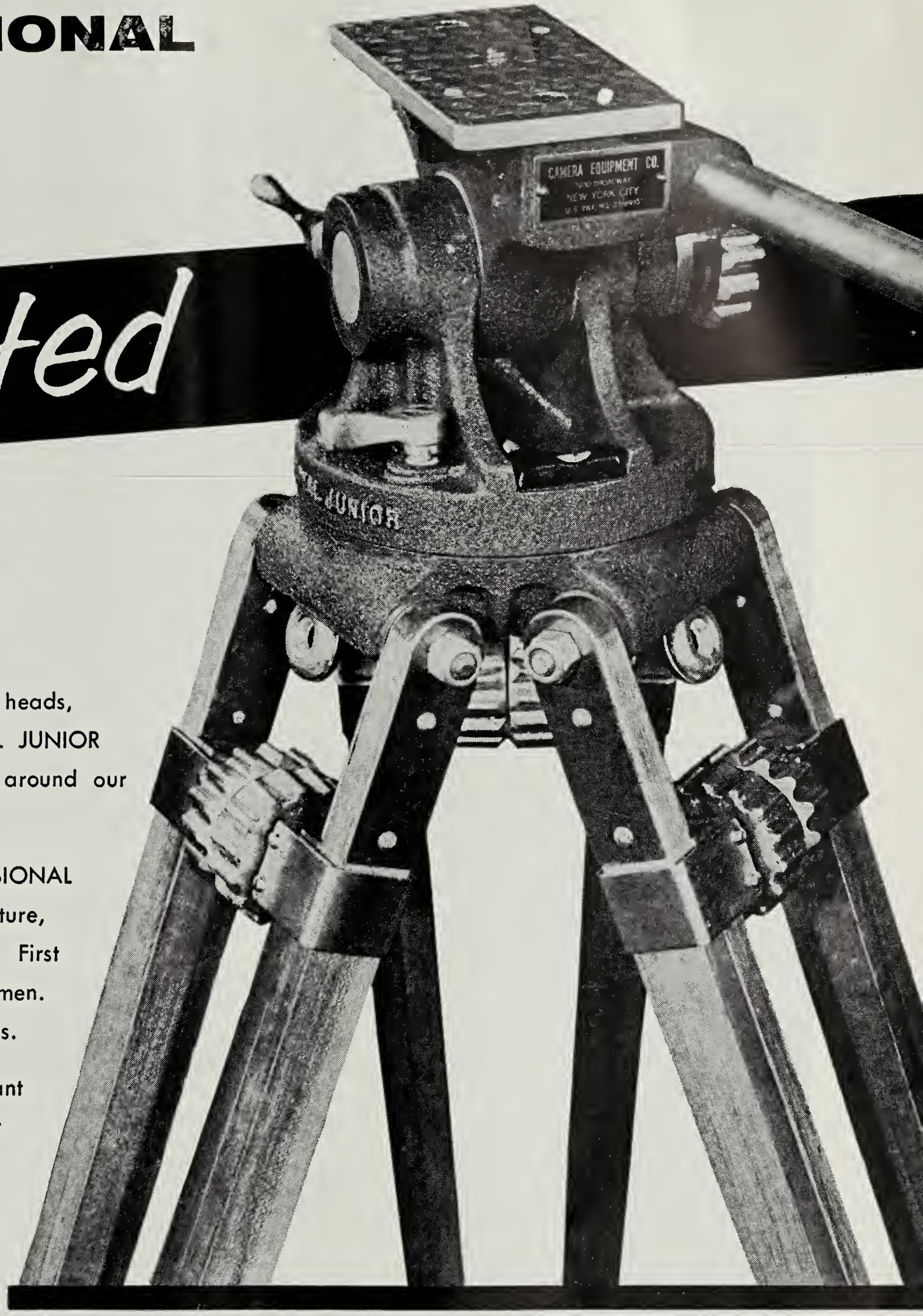
DU PONT
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BETTER THINGS FOR BETTER LIVING
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DU PONT MOTION PICTURE FILM

PROFESSIONAL JUNIOR

-MOST imitated tripod in the world!



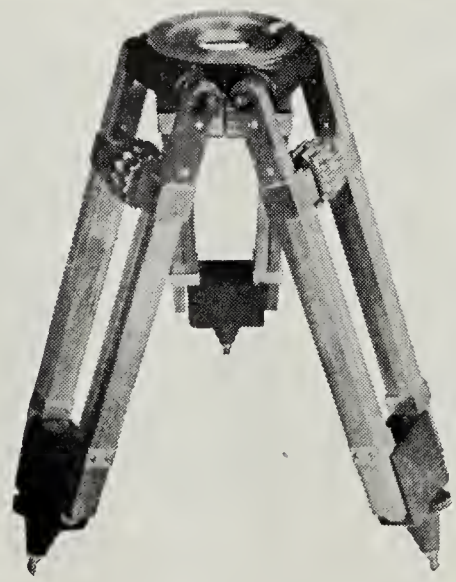
They've been standing on their heads, trying to copy PROFESSIONAL JUNIOR Tripod—but nobody can get around our exclusive patented features.

Features which make PROFESSIONAL JUNIOR *tops* in the motion picture, TV and commercial film world. First choice of professional cameramen. First choice of our Armed Forces.

Is your work "dragging" for want of an outstanding tripod? Get PROFESSIONAL JUNIOR— *the price hasn't changed in 15 years.* Get it today.



Professional Junior
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interchangeable with Friction Head on same tripod.



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BABY TRIPOD
—for friction and geared Heads.
Has substantial shoe and spur.
Measures from floor to flange 25" extended—
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CAMERA EQUIPMENT CO.
Dept. A-12-2 • 1600 Broadway • New York City



AMERICAN

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

ARTHUR E. GAVIN, *Editor*
MARION HUTCHINS, *Editorial Assistant* EMERY HUSE, *Technical Editor*
EDITORIAL ADVISORY BOARD: John Arnold, Arthur Edeson, Lee Garmes, Charles Rosher, Leon Shamroy, Fred Gage, Glenn R. Kershner

Editorial and Business Office: 1782 N. Orange Dr., Hollywood 28, Calif.
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VOL. 37 JANUARY • 1956 NO. 1

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ON THE COVER

PRE-PRODUCTION TESTING — Grace Kelly poses for wardrobe and make-up tests for M-G-M's "The Swan," in which she portrays a beautiful Princess. Director of Photography Joseph Ruttenberg, A.S.C., is shown gauging the lighting for Miss Kelly's tests. Ruttenberg's article on "Photographing Pre-Production Tests" begins on page 24 of this issue.

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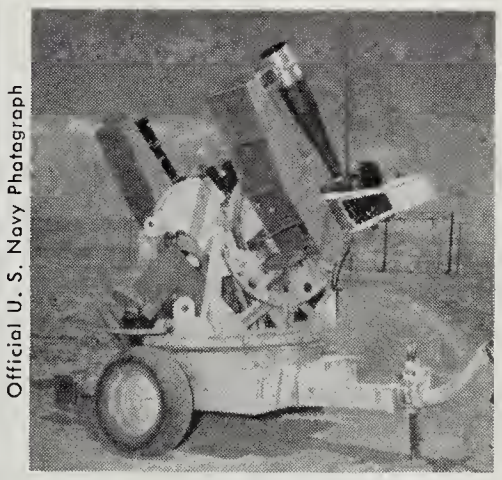


Multiple Mitchell Cameras an Mobile Turret at U. S. Naval Air Missile Test Center, Paint Mugu, Calif. Seventeen 35mm and five 16mm Mitchells are used here.

CAMERA BECOMES BASIC RESEARCH TOOL

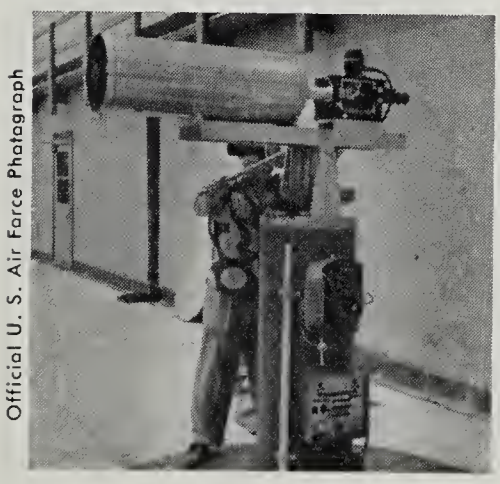


200 Mitchell Cameras, mastly high-speed madels, are in use here at White Sands Praving Graund, New Mexica.



Pawered Tracking Mount has Mitchell Cameras; aver 50 Mitchells are used at U.S. Naval Ordnance Test Statian, Inyakern, Calif.

Mitchell Telephota Tracking Camera in use at Air Farce Missile Test Center, Cape Canaveral, Flarida.



One af 12 Mitchell cameras used ta track missiles at Hallaman Air Develapment Center, Alamagarda, New Mexica.



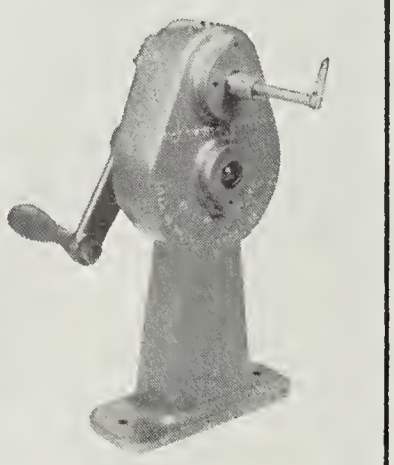
Vital Projects Now Heavy Users of Motion Picture Cameras With Flexible Performance Range

Accelerated project work has today put increased demands upon motion picture equipment. Because of the need for a camera which can perform under a broad range of research and development requirements, the Mitchell Camera has today become the standard *basic* motion picture camera used in projects in this country and abroad.

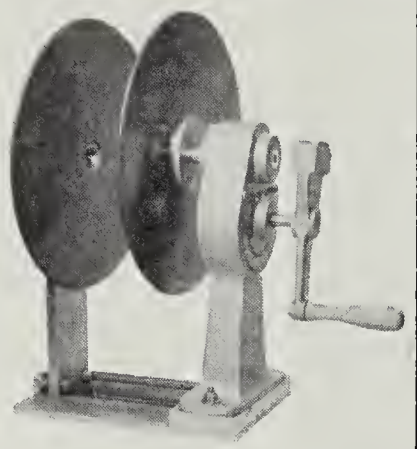
No other single camera can be used so flexibly, under such extreme filming conditions, and for such a broad range of cinematography as can a Mitchell Camera. In one location, alone, 200 Mitchell 35mm and 16mm cameras are now in use at White Sands Proving Ground.

Write today on your letterhead for information on the Mitchell Camera line.

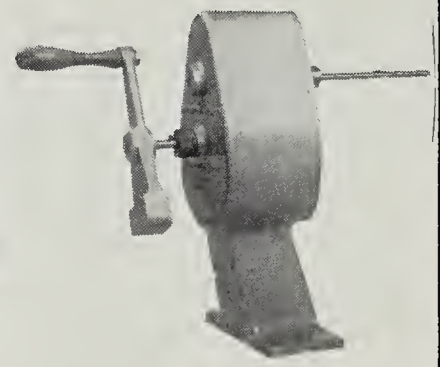
Mitchell Camera
CORPORATION
666 WEST HARVARD STREET
GLENDALE 4, CALIFORNIA
Cable Address: "MITCAMCO"



hand rewind



negative rewind set



differential rewind



power rewind

precision film editing equipment

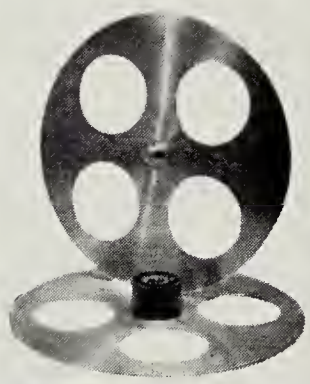
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HOLLYWOOD 38
CALIFORNIA

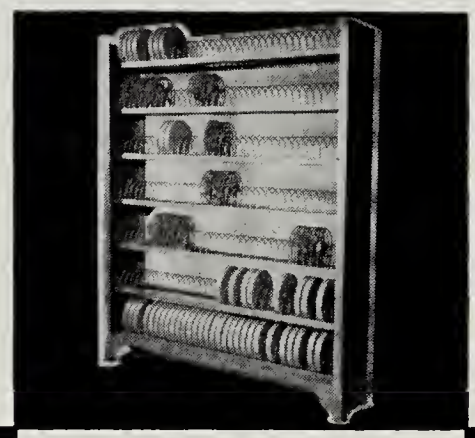
synchronizer



split reels

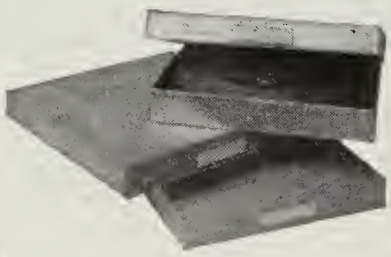


film racks



editing table





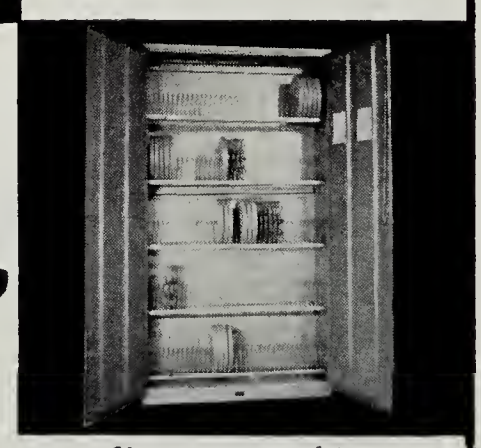
vault cans



swivel base



tightwind



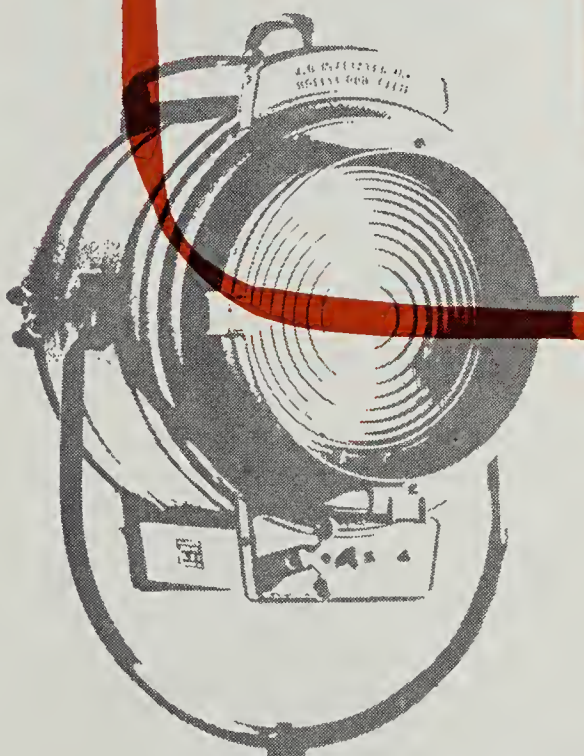
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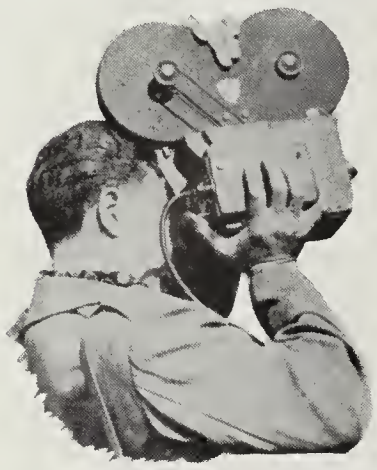
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*CITY*_____ *ZONE*____ *STATE*_____

ANNOUNCES

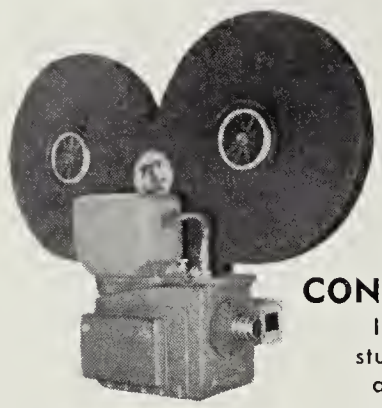
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400 FOOT CONVERSION

Ideal for Newsreel Work

Modification	$325.00
Footage Counter	50.00
400' Magazine	150.00
Total Price	$525.00



1200 FOOT CONVERSION

Ideal for studio work and kine recording

Modification	$335.00
Footage Counter	50.00
External take-up Motor	125.00
1200' Magazine	250.00
Total Price	$760.00

Kine Recording Shutter $95.00

Delivery 10 working days in our shop. All prices F.O.B. New York. Send check or money order with order or deposit of 25% and modified equipment will be shipped COD for balance. All work fully guaranteed in writing.



SENSATIONAL NEW SYNCTRON MODEL 250 CINE LIGHT

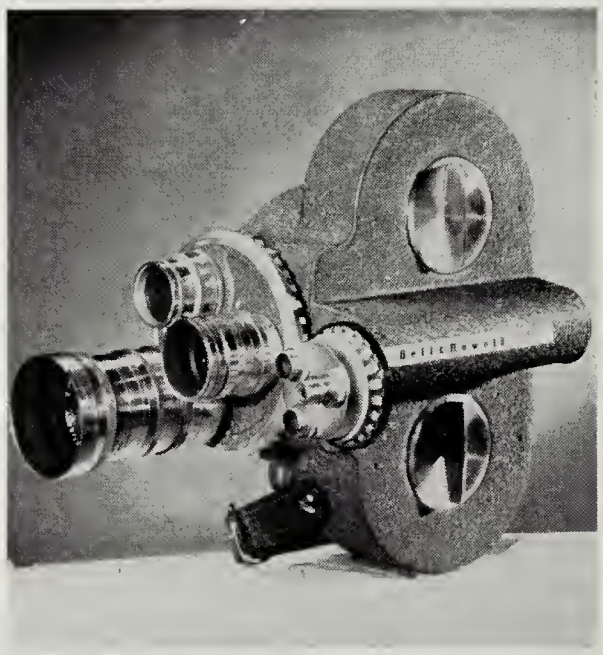
- LIGHTEST, most compact, completely portable newsreel light on the market.
- POWER SOURCE—revolutionary new lifetime rechargeable DYNASEAL nickel-cadmium battery, unconditionally guaranteed for 5 yrs.
- Built-in automatic 4 hour battery charger.
- Write for free literature.

TELEVISION Specialty COMPANY Inc.

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WHAT'S NEW

. . . in equipment, accessories, service

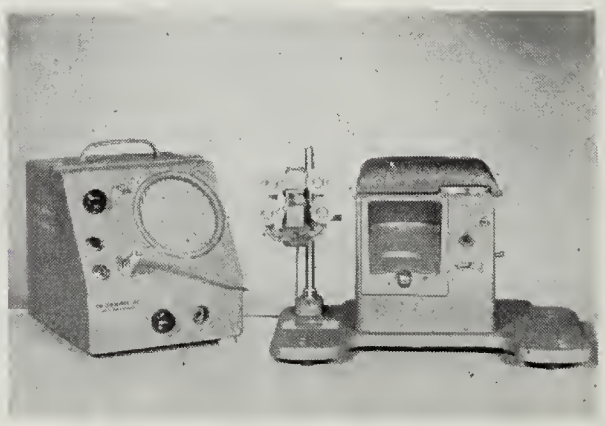


New Model-70 Camera

Greater operating convenience and improved styling are features of Bell & Howell Company's latest addition to its series of 16mm model 70 cameras.

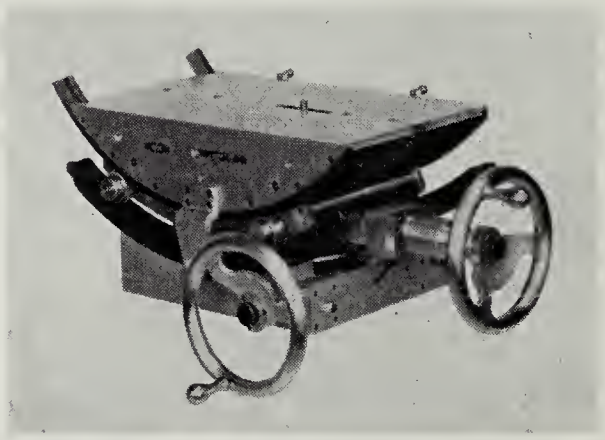
Called the 70-DR, new camera features coupled view finder and lens turret. When rotating lens turret, each corresponding viewfinder objective is quickly and automatically positioned, thus eliminating the possibility of a user forgetting to rotate the finder when changing lenses.

Camera retains all features of its predecessor, the 70-DL, including 7 camera speeds, 22-ft. film run, three-lens turret, 100-ft. film capacity, forward-reverse hand crank, positive finder system, and lenses ranging from 10mm to 6-inches in focal length. Prices range from $361.50 to $508.05, depending upon lenses selected.



Dual Reader, Magnetic Model

The Camera Mart, Inc., announces a magnetic dual reader having a magnetic playback head that is adjustable to track position on 16mm, 17½mm and 35mm film, as well as 16mm and 35mm Magnastripe film. Unit may be used with any 16mm or 35mm silent film viewer to match picture with single or double system sound. With new model, it is possible to check a 35mm composite picture having optical sound against a second magnetic track. When films have both magnetic and optical tracks, the Dual Reader will check one against the other. Complete with amplifier and base, list price of magnetic model is $185.00. Combination optical-magnetic model is priced at $295.00.



Camera Gear Head

S.O.S. Cinema Supply Corp., 602 West 52nd St., New York, N.Y., introduces this month the Worral Geared Camera head for Mitchell and cameras of similar size and design. Head features a two-speed dual track, pan or hi-speed tilt, an adjustable tie-down screw for balance, and over-size handwheel controls. Pan and tilt gears may be disengaged so head "floats" friction free on balls or rollers. Unit fits any tripod, dolly, boom or crane, weighs approximately 80 pounds, and is priced at $1350.00.

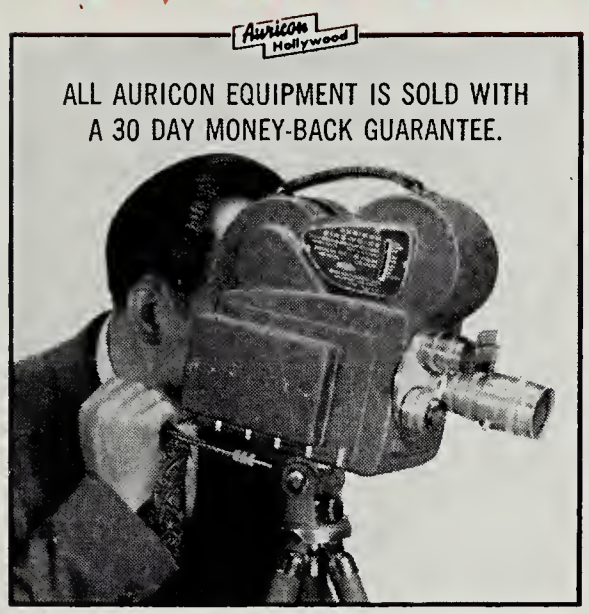
Fotofade Now in Tubes

The Kalart Company announces that Craig Fotofade, the chemical dye used for making fades on film after photography, is now available in handy tubes. Fades are made by dipping black-and-white or color film frame by frame into solution prepared from Fotofade; professional-looking fades are simply and quickly achieved.

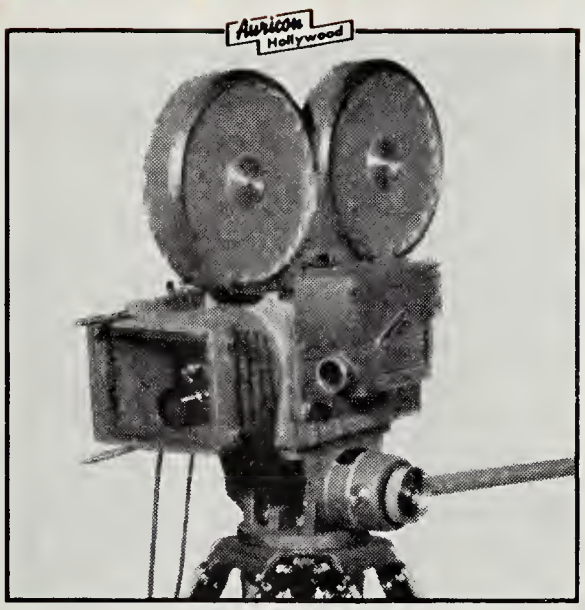
One tube of Fotofades will make 8

(Continued on Page 18)

AURICON 16mm Sound-On-Film for Professional Results!



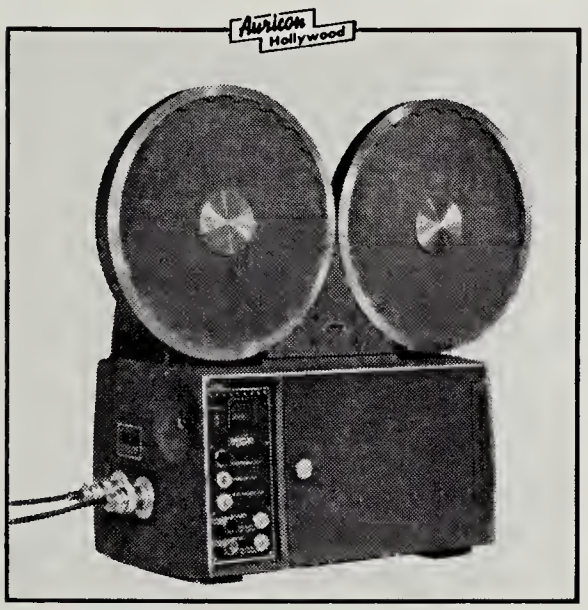
"CINE-VOICE" 16 mm Optical Sound-On-Film Camera. ★ 100 ft. film capacity for 2¾ minutes of recording; 6-Volt DC Convertor or 115-Volt AC operation. ★ $695.00 (and up).



"AURICON PRO-600" 16mm Optical Sound-On-Film Camera. ★ 600 ft. film capacity for 16½ minutes of recording. ★ $1497.00 (and up) with 30 day money-back guarantee.



"SUPER 1200" 16 mm Optical Sound-On-Film Camera. ★ 1200 ft. film capacity for 33 minutes of recording. ★ $4652.15 (and up) complete for "High-Fidelity" Talking Pictures.



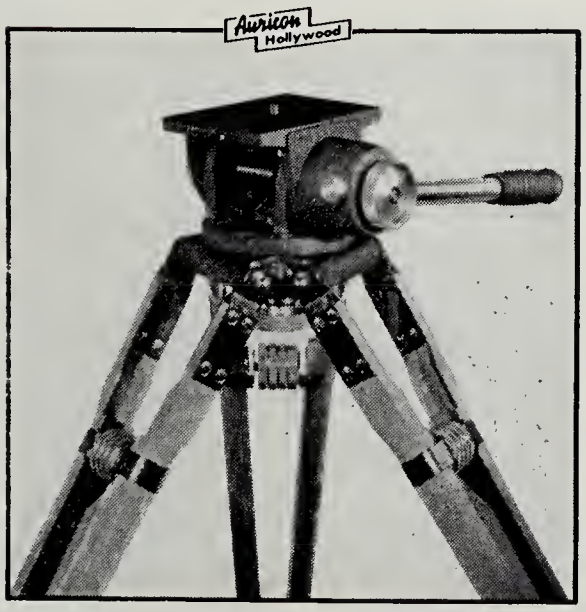
SOUND RECORDER — Model RM-30 . . . 1200 foot film capacity, synchronous motor for "double-system" 16mm Optical Sound-On-Film operation. ★ $3359.00 (and up)



PORTABLE POWER SUPPLY UNIT — Model PS-21 . . . Silent in operation, furnishes 115-Volt AC power to drive "Single System" or "Double System" Auricon Equipment from 12 Volt Storage Battery, for remote "location" filming. ★ $269.50



DUAL PHONO-TURNTABLE — Model DPT-10 . . . Takes up to 16 inch discs with individual Volume Controls for re-recording music and sound effects to 16 mm Sound-On-Film. ★ $161.15



TRIPOD — Models FT-10 and FT-10S12 . . . Pan-Tilt Head Professional Tripod for velvet-smooth action. Perfectly counter-balanced to prevent Camera "dumping." ★ $325.00 (and up).

Strictly for Profit

CHOOSE AURICON

If it's profit you're after in the production of 16 mm Sound-On-Film Talking Pictures, Auricon Cameras provide ideal working tools for shooting profitable Television Newsreels, film commercials, inserts, and local candid-camera programming. Now you can get Lip-Synchronized Sound WITH your picture at NO additional film cost with Auricon 16 mm "Optical" Sound-On-Film Cameras. Precision designed and built to "take it." Strictly for Profit — Choose Auricon!



BERNDT-BACH, INC.

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Auricon Hollywood

MANUFACTURERS OF SOUND-ON-FILM RECORDING EQUIPMENT SINCE 1931

Auricon Equipment is sold with a 30-day money-back guarantee. You must be satisfied.

6902A

Please send me free Auricon Catalog

Name.....

(Please write your address in margin)

Hollywood
Bulletin Board



PAST PRESIDENTS of American Society of Cinematographers were presented commemorative plaques at the December meeting of the Society. Standing from left to right are: Leon Shamroy, Ray Rennahan, Victor Milner, Charles Clarke, and Hal Mohr. Seated: Dan B. Clark, John Boyle, A.S.C. president Arthur Miller, Arthur Edeson and John Arnold.



COMMEMORATIVE plaques are adorned with miniature gavel, replica of member's Gold Card, and plate bearing inscription of identity of past president.



GEORGE BURNS proudly displays Award of Merit presented McCadden Productions by the A.S.C. for excellence of photography of the Carnation commercials. At left is Phil Tannura who films "Burns and Allen" show. Arthur Miller (right) made presentation.

The American Society of Cinematographers last month presented McCadden Productions with its award of Merit for "outstanding photographic quality and excellence of star endorsement" in its Carnation Milk commercials for the "Burns and Allen Show." Arthur Miller, president of the A.S.C., presented the award to George Burns and Phil Tannura, the show's director of photography, on the Burns & Allen set at General Service Studio in Hollywood.

"Commercials only sell when they are believable and honest, and have the true quality of being part of the program itself," Arthur Miller pointed out in making the presentation.

• • •

Sam Leavitt, A.S.C., has been signed by Naciena Productions to direct the photography of "Count The Dead." Production rolls at California Studio January 9th.

• • •

J. Burgi Contner, A.S.C., director of photography for Guild Films, New York City, is currently shooting a series of 39 "The Goldbergs" half-hour TV shows. Alternately, he photographs the "I Spy" series of half-hour mystery TV dramas starring Raymond Massey.

• • •

Boris Kaufman, A.S.C., last year's "Oscar" winner for best B&W photography ("Waterfront") is currently on location in Mississippi, directing the photography of "Baby Doll," Tennessee Williams story being directed by Elia Kazan.

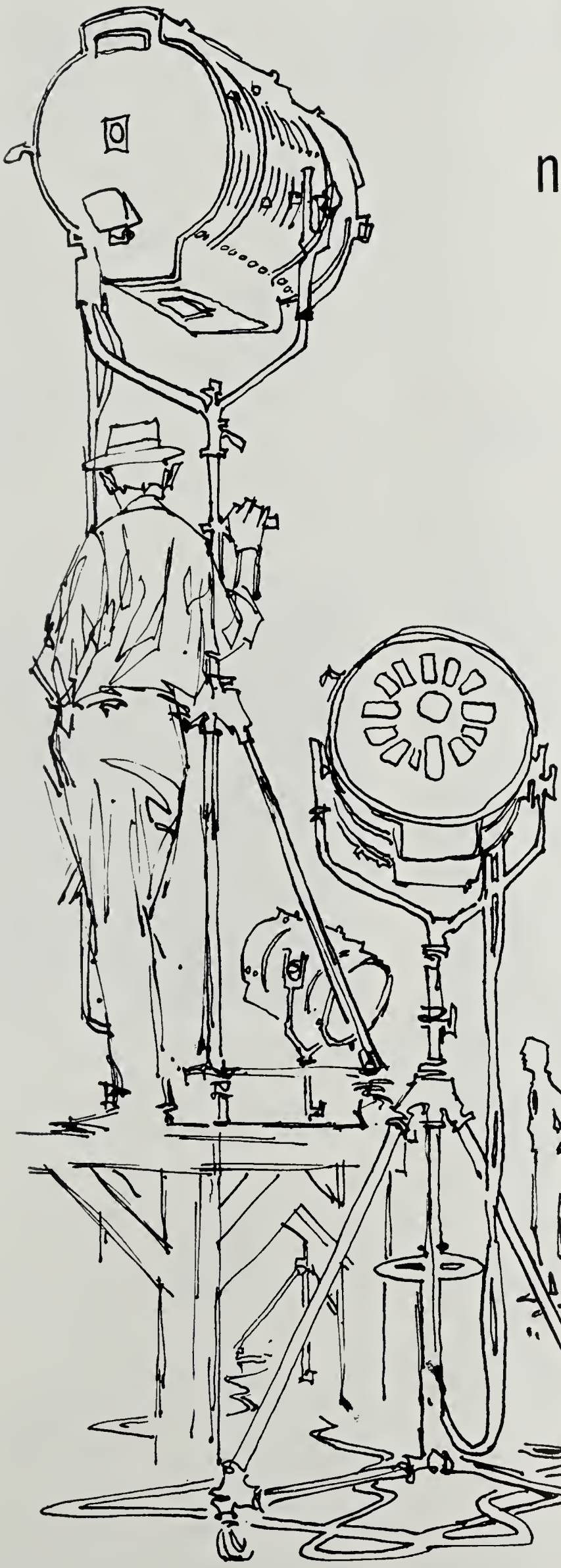
• • •

Ray Foster, A.S.C., is shooting a new TV film series with Stuart Hamblin titled "Birth of a Song" at Goldwyn Studios in Hollywood.

• • •

Charles Rosher, A.S.C., wound up his

(Continued on Page 12)



need location lighting...fast?

Call on Jack Frost, one of the nation's largest suppliers of temporary lighting facilities.

Wherever you are, whatever your lighting needs, you can depend on Jack Frost's expert handling and complete range of equipment, from a 100 watt inkie to 225 amp arc with mobile power plants. In the studio too, we can supplement your present equipment to meet any situation, anywhere. We've been doing it for years for many of the top shows.

Our service includes complete installation and removal at one low cost.

free estimates

Write or wire for a free estimate and a Free Catalog of Equipment.

JACK A. FROST

Dept. AMCI

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425 Burnamthorpe Road, Toronto 18, Ontario

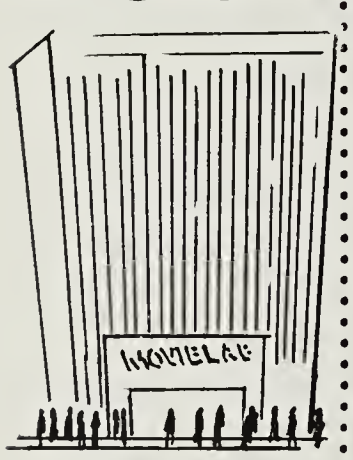
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is our business
Plus
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service

in the East it's...

MOVIELAB







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BULLETIN BOARD

(Continued from Page 10)

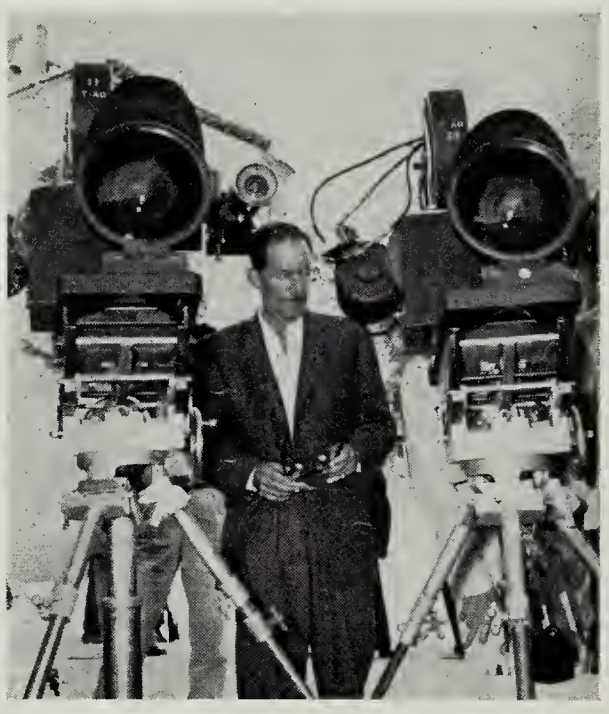
globetrotting last month and together with Mrs. Rosher returned to his estate in Jamaica. While in South Africa, the Roshers were guests of several of the amateur cine clubs and participated in judging their film contests. Rosher is slated to visit Hollywood next month.

• • •

Wilton R. Holm, a member of Du Pont's photographic products research department and an Associate Member of the A.S.C., last month was made secretary of the Society of Motion Picture and Television Engineers. He will serve out unexpired term of former secretary Edward S. Seeley of Altec Lansing, Hollywood. Holm, whose hobby once was writing screenplays, has written a number of technical articles for *American Cinematographer.*

• • •

Lionel Lindon, A.S.C., is directing the photography of Michael Todd's "Around



FAMOUS bug-eye lenses of the Todd-AO cameras stand ready to catch anything and everything in bullfight arena in Spain for Michael Todd's "Around The World in 80 Days," being photographed by Lionel Lindon, A.S.C.

the World in 80 Days" in Todd-AO. Picture features David Niven, Cantinflas, Shirley MacLaine and Robert Newton, and is the second motion picture to be filmed in the Todd-AO process—the first picture being "Oklahoma." Two Todd-AO cameras are being used in filming all location shots.

• • •

National Board of Review of Motion Pictures, Inc., which has functioned for a number of years as a film guide post in New York, recently published its selection of the year's "best films, best performances," etc., and also bestowed special commendation on "Strategic Air Command" for aerial photography—which incidentally, was done by Tom Tutwiler, A.S.C.

DEDICATED TO BETTER PERFORMANCE



COLLAPSIBLE 3-WHEEL DOLLY

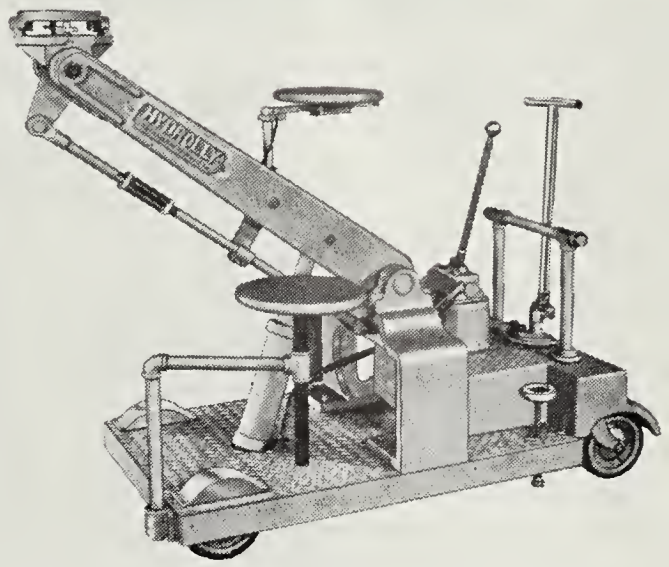
For motion picture and TV cameras. Sturdy cast aluminum. For standard or baby tripods. Additional baby tripod point holders to control spread of tripod legs. Adjustable spring seat. Extra wide rubber wheels. Bronze tie down clamps and other features.

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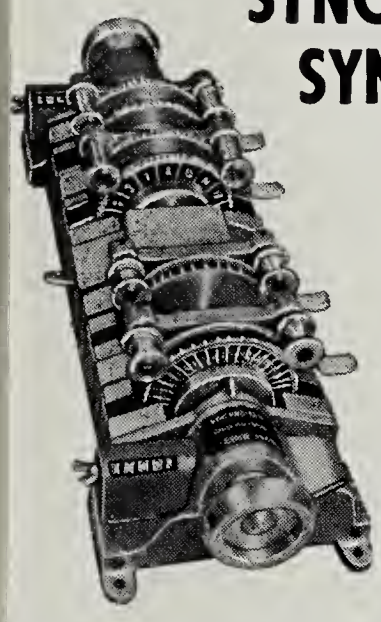
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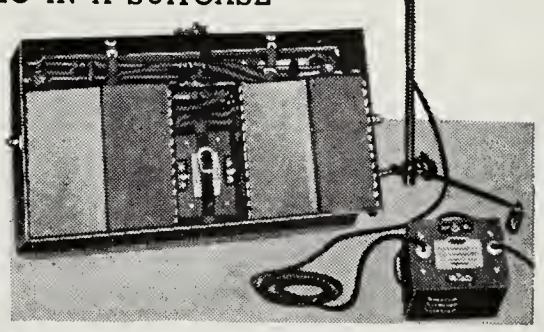
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For Studio or on Location. Lightweight — collapsible — for TV and motion picture production. Sturdy construction. Boom telescopes 7 to 17 ft. Rear handle for directional mike control. A remote control permits 360° rotation of the microphone. Operator can push the boom and operate microphone swivel simultaneously. Extension rods make it simple to operate microphone rotation from floor. Microphone cable hangs outside of boom, preventing cable from tangling with the rotation mechanism. Ball bearing casters, rigid foot locks, pneumatic drop check for lowering the boom, etc.

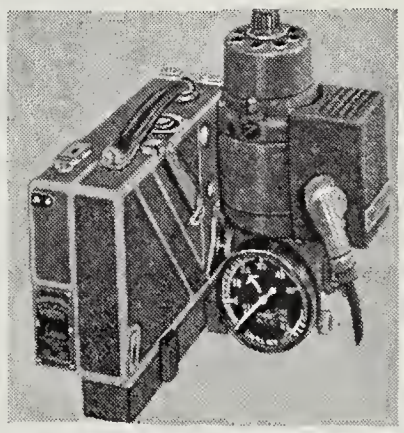
VARIABLE-SPEED MOTOR with TACHOMETER

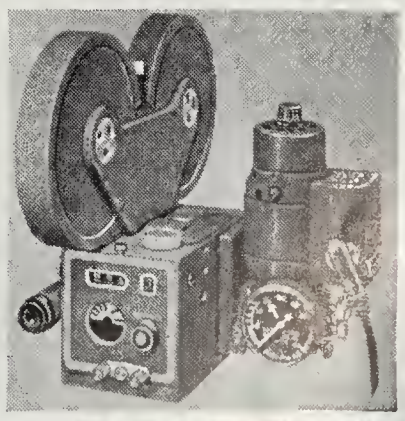
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16mm or 35mm in 10 SECONDS!

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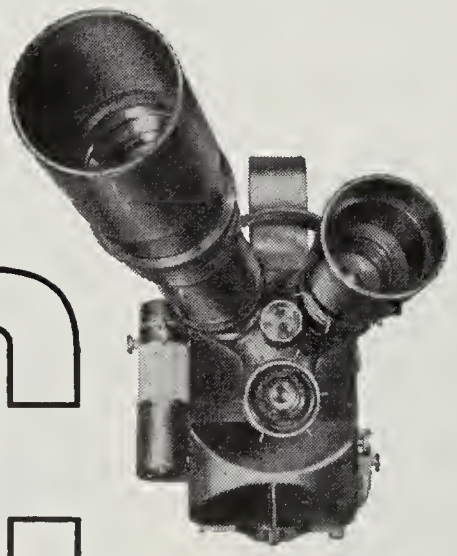
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YOUR QUESTIONS

ANSWERED BY JACKSON J. ROSE, A.S.C.

QUESTIONS of general interest will be answered in this column. We regret that demands on the editor's time will not permit personal replies.—*Ed.*

Q Recently I photographed a number of scenes in a factory, showing machines in operation. The resultant footage was disappointing. Because the machinery was painted dark grey it failed to show up well, and the bright metal trim produced disturbing glare, bouncing light back toward the camera lens. What can I do to improve the photography of such a setting?—J.H., Ill.

This is the type of situation that is invariably met by all cameramen and the solution comes with experience—by trial and error. You could have the machinery painted a lighter color, then place lights behind the various machinery units to create planes of separation. The bright metal should be dulled with a spray solution now on the market for this purpose. Or lacking this, simply dab a wad of putty on the bright surface. With key lighting of around 200, and using Tri-X film, a stop of f/5.6 should get acceptable results.

Q In photographing store window displays recently with Commercial Kodachrome, I find I picked up my own image reflection which did not seem apparent when I was shooting. How can this be avoided?—A.G., Colo.

Use of a Pola Screen before your camera lens should remedy the trouble. Be sure to follow directions carefully and open up your lens an extra two stops beyond what your meter calls for.

Q I have a commitment to make a 16mm documentary film in color that is to be screened in large auditoriums and theatres. I will use two Bolex H-16 cameras with the following lenses: 15mm f/2.7, 25mm f/1.9 and a 63mm telephoto f/2.7. All are coated Eastman lenses, have produced sharp pictures for small home movie screens. I'm wondering if this equipment can produce pictures sharp enough for big screen projection.—R.R., Mich.

Assuming that you are an experienced photographer and know how to get maximum results with the equipment described, there should be no reason why your pictures can't be screened in theatres and auditoriums. All lecture films exhibited by Burton Holmes in theatres and auditoriums are 16mm and are projected with standard 16mm projectors. Projecting the *original* instead of a dupe, of course, will insure the maximum sharpness and clarity.

Q We have been having quite a problem with stroboscopic effects in animation and live action photography. On animation work, when we pull the background through in front of the camera—east or west—or any subject in the foreground, we get this stroboscopic effect.

Recently, when filming live action—a revolving turntable with merchandise on it—the stroboscopic effect was so bad we had to discard the shot. The turntable rotated very slowly and the camera was located about three feet from front edge of turntable, and elevated about 1½ feet —looking down on the turntable holding a display of candy bars.—J.E.W., Tenn.

Your trouble can be caused by a number of things, but mostly it would seem that your problem is too many verticals. Too many verticals in animation will create a pronounced stroboscopic effect.

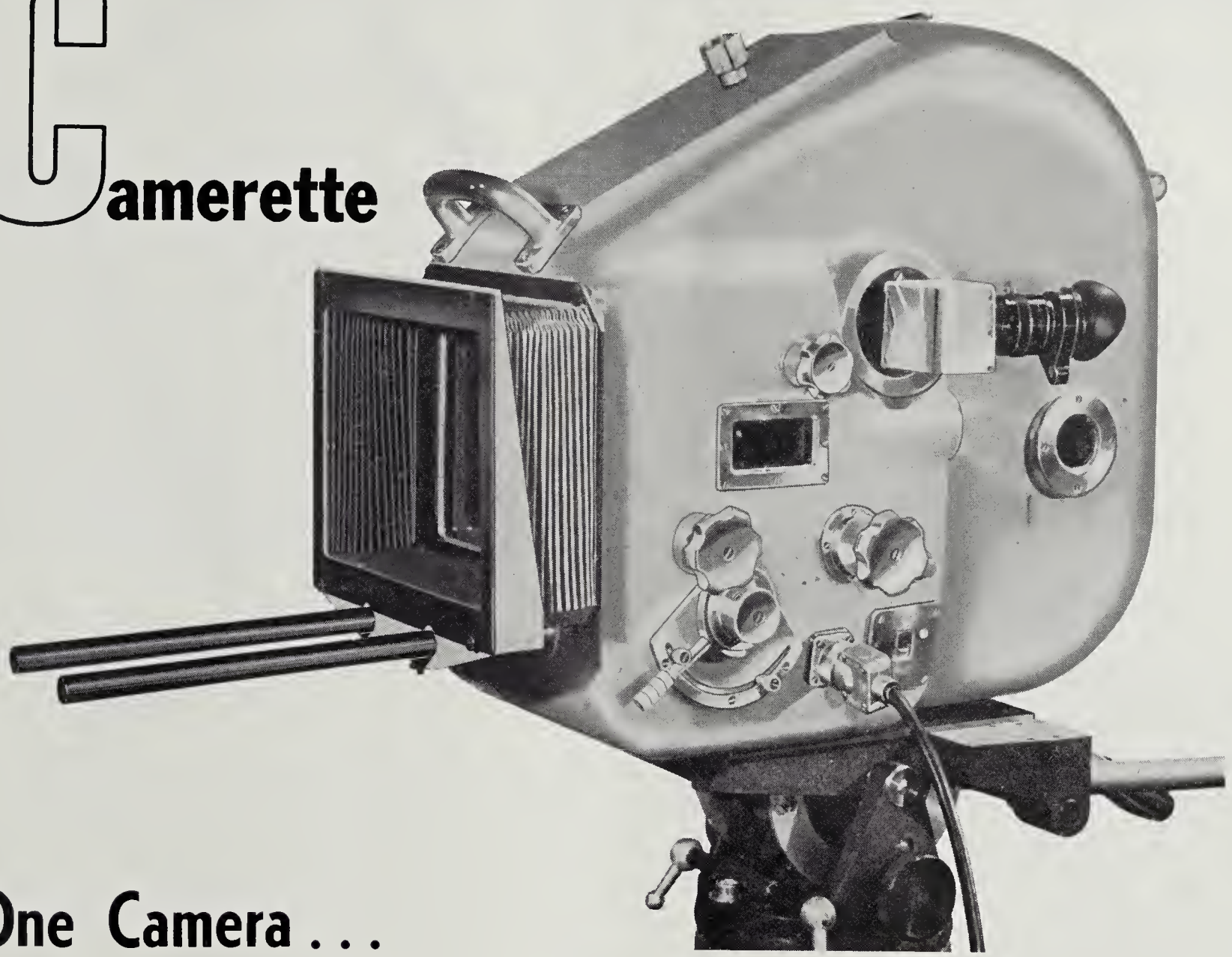
The rate of panning movement is another cause. Even when you think you are panning slowly, strobe effects will result; so the remedy is to pan still slower. In the case of the turntable and candy bar setup, if you panned the camera in the opposite direction from that of the turntable rotation, you virtually doubled the speed of your panning action.

Sometimes the degree of shutter opening used will cause strobe effect. This can only be corrected by trial and error. So make your shots in several ways, altering panning speed, reducing the verticals, and you're bound to get one or more acceptable takes.

Correction

The answer to question of "P.M., Hawaii," last month, should have read "at . . . 24 f.p.s. it is 1/46th of a second."—ED.

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One Camera . . .
One Blimp . . .
For Both 16mm and 35mm Cinematography

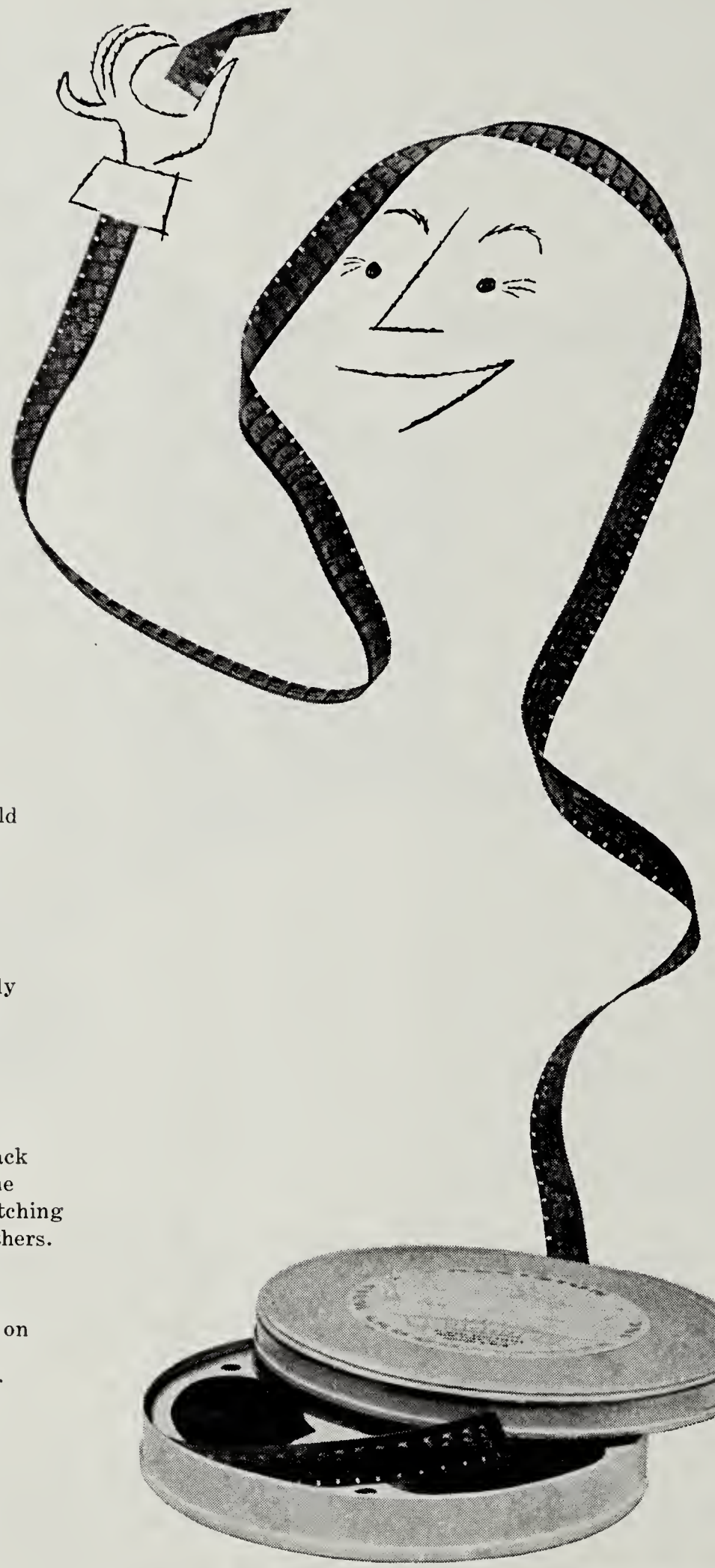
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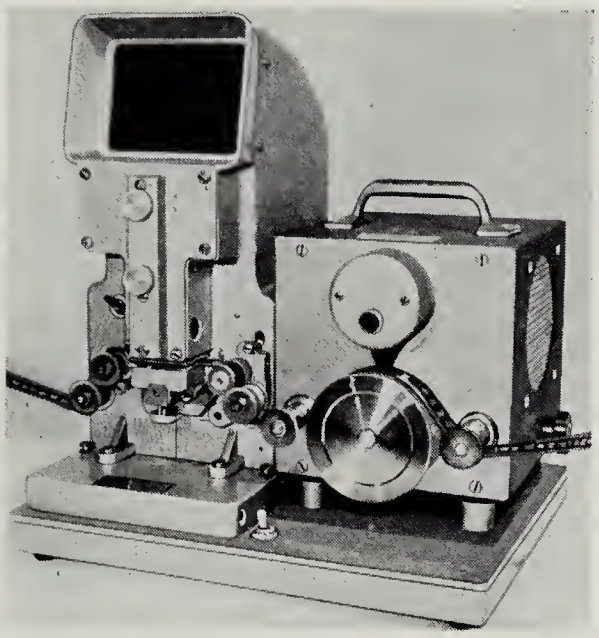
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The One-Stop Source Of Supply

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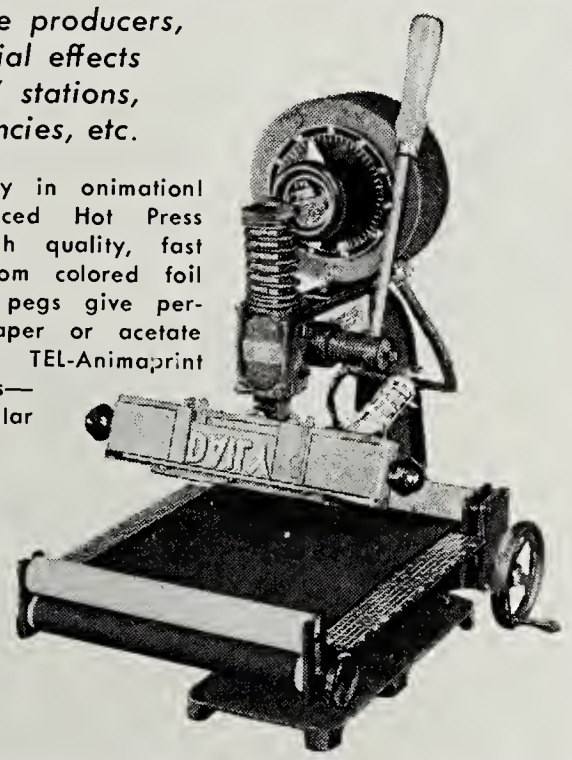
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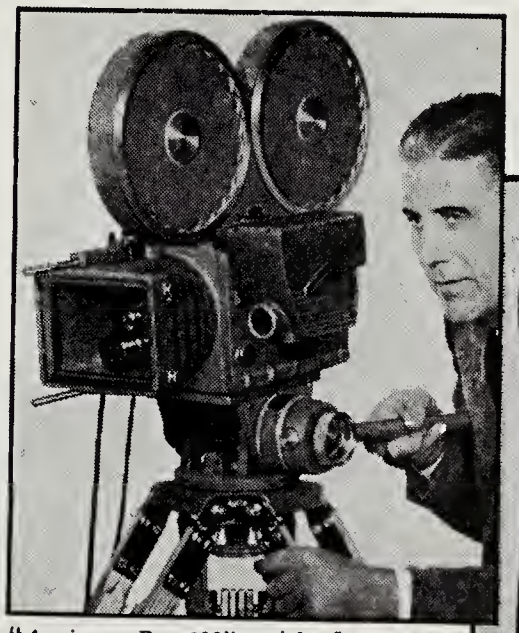
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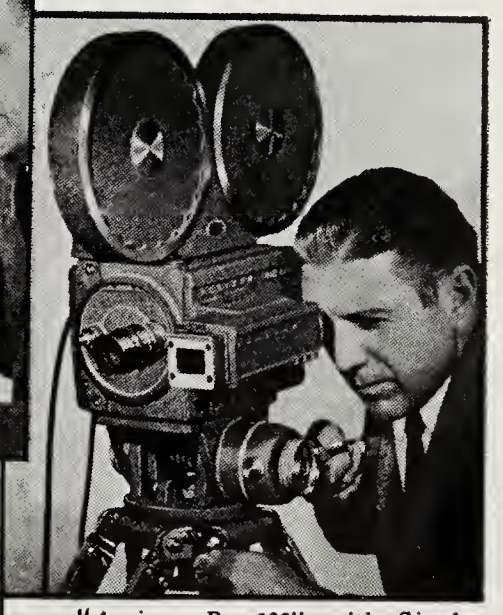
YOUR BEST DEAL ON The ALL NEW AURICON PRO-600

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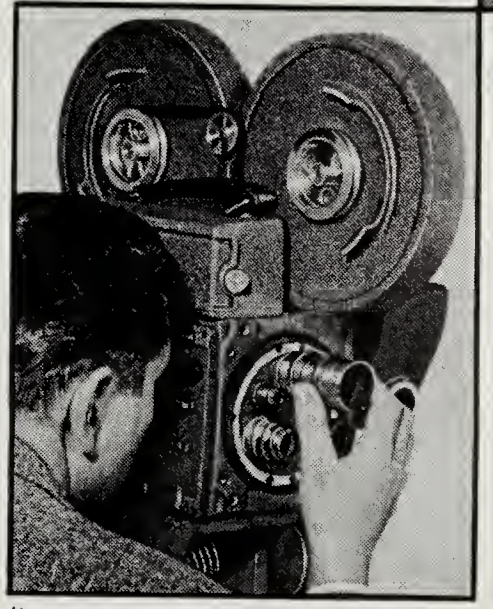


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★ Self-blimped for completely quiet studio operation. The whisper-quiet film flow of The "Auricon Pro-600" is silent proof of precision design. Your sound-recording microphone never picks up "Pro-600" Camera noise!

★ 600 ft. film Magazines which Auricon-Electromatic Take-up for 16 minutes of continuous "Talking-Picture" filming.

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★ Available at added cost is "Single-System" equipment for Optical Sound-Track-On-Film, "C-mount" Lenses, Film Magazines, View-Finders, 3-Lens Turret, Critical Ground-Glass Focusing, Lens Sun-Shades, Tele-Finders, etc.

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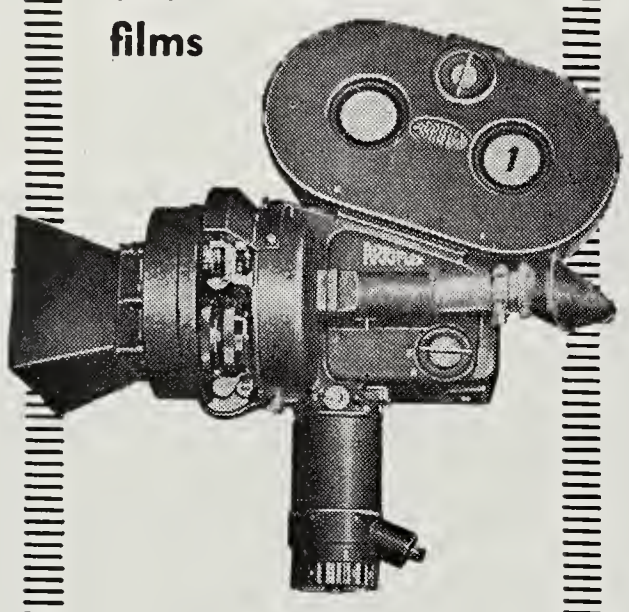
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New 35 mm Model 2A
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Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200′ or 400′ magazine. Write for free folder.

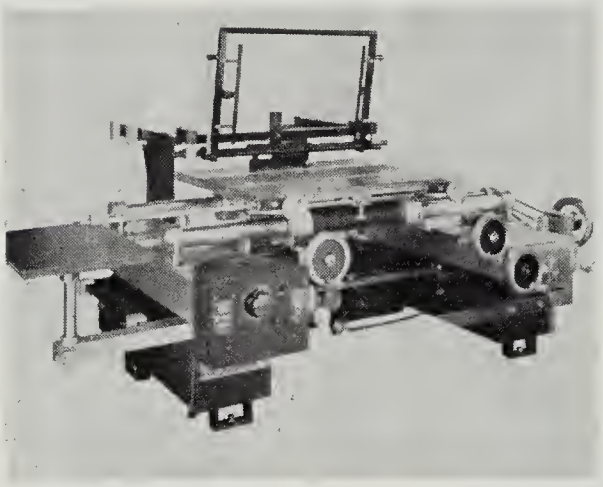
Blimp now available.
16mm ARRIFLEX also available.

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CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY

WHAT'S NEW

(Continued from Page 8)

ounces of solution and sells for 85 cents.



Compound Table

J. G. Saltzman, Inc., 480 Lexington Ave., New York 17, N.Y., announce availability of a new Caesar Compound Table for animation and special effects photography. Improved design enables operator to get close to his work without undue effort. All movements are calibrated in .010″. The table can be either hand or electrically operated, and has a counterbalanced and interchangeable platen. Data sheet, prices, etc., may be had by writing the company.



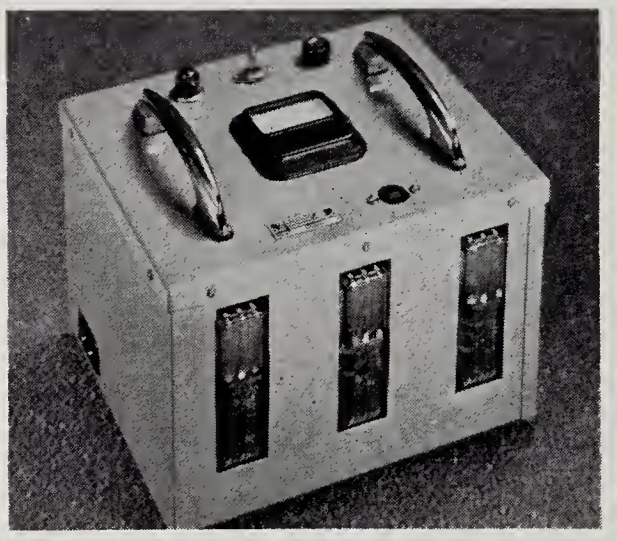
Collapsible Dolly

Cinekad Engineering Co., 500 West 52nd St., New York 19, N.Y., announces a new collapsible TV dolly designed to provide extra convenience when used in studio or on location. Special features include unique caster locking system which permits setting two or all three of the 5-inch heavy-duty rubber-tired wheels in parallel position for straight-line dolly shots; screw-clamps for securing tripod leg tips to dolly; and ability to fold into compact, easy-to-carry unit 28″ in length. Net weight is only 18 lbs.

For price, write the manufacturer, mentioning *American Cinematographer*.

Craig Cement in Larger Bottles

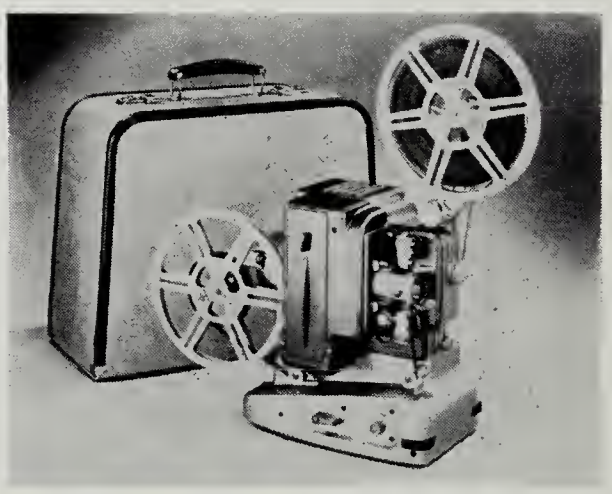
The Kalart Company announces that Craig Formula-7 Film Cement is now available in 8 and 16 ounce bottles, in addition to the original 1-oz. bottles. Larger bottles are designed for use by cine labs, studio cutting rooms and TV film rooms. Price of 8-oz. size is $2.45; 16-oz. size, $3.50.



Portable Power Supply

Filmtronics, Inc., 96 Hunting St., New London, Conn., announces a new portable power supply for use with the Auricon Super 1200, Arriflex 35mm, as well as other models of these two cameras. It is also recommended for powering motor-driven Bolex, Filmo, Cine-Special, Wall and Maurer cameras.

A feature is the visible non-spillable battery cells which have red-ball indicators to show condition of charge or discharge. Unit will hold charge for 120 days. Power output is 110-volts, 75 watts intermittently, 60 watts continuously for 1½ hours. DC current output, 6 volts. List price is $169.50.



Bolex 8mm Projector

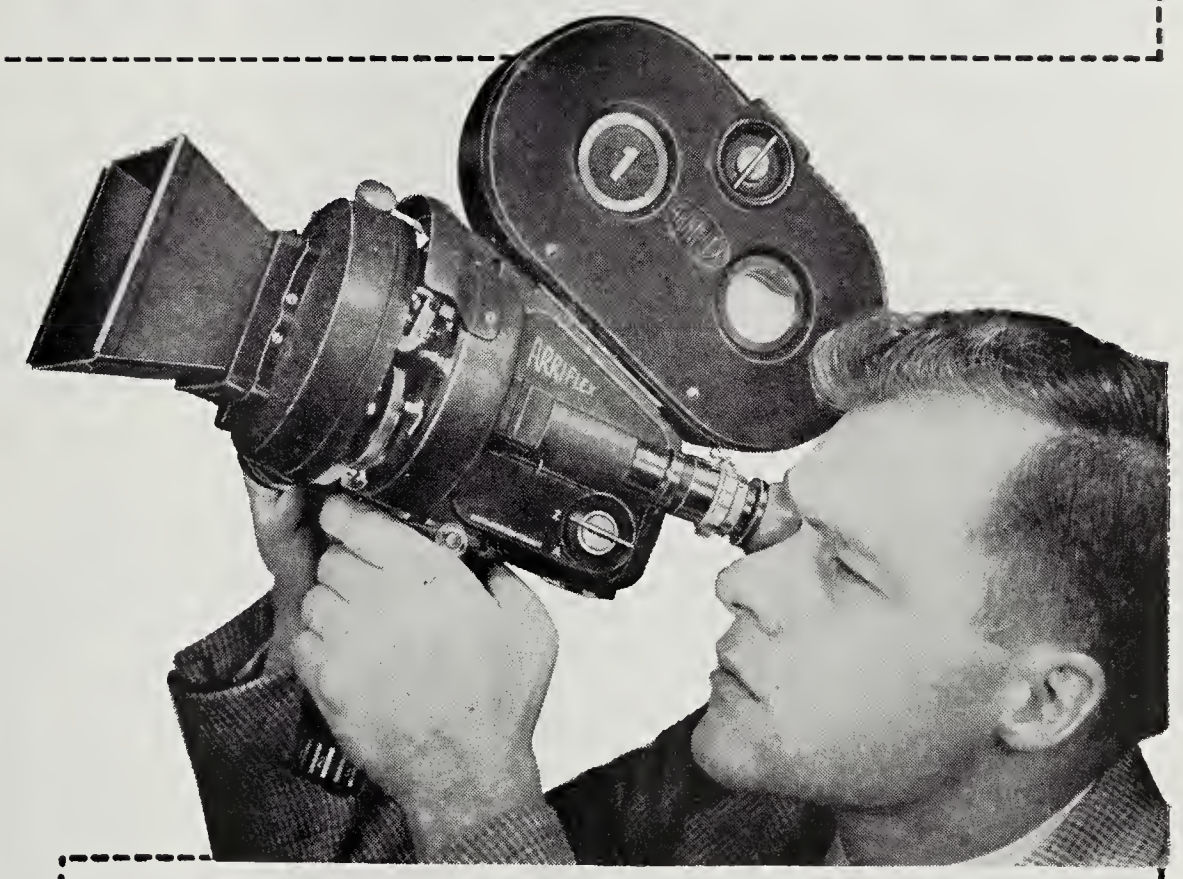
Paillard Products, Inc., New York, announces a new 8mm projector — the Bolex M-8 featuring the exclusive "Filmguard." Lamp is 500 watts; lens is f/1.5. Other features include direct motor drive on takeup. Price is $169.50, including Deluxe carrying case.

May cost you less to own

than it costs to rent other equipment

ARRIFLEX 35

MODEL IIA



with soundproof blimp and synchronous motor . . .

For little more than the usual rental charges for equipment, you can own a complete Arriflex 35 Model IIA sound outfit, including the variable speed motor, Synchronous Motor and Soundproof Blimp. As a result, more and more studios and cameramen are recognizing this fact and are buying Arriflex.

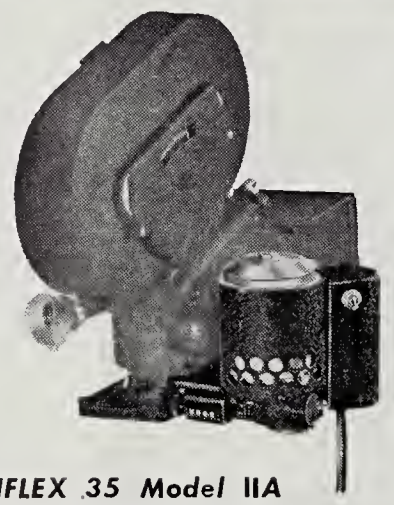
The Arriflex 35 Model IIA offers many advantages over other 35mm cine cameras. For example, without the Blimp and with battery-operated variable-speed motor, the Arriflex is an unusually light and easy camera to handle — ideal for location shots under the most difficult conditions — even for handheld filming. With the Soundproof Blimp and Synchronous Motor, it becomes the perfect camera for lip-synched sound — both in the studio and out.

The Arriflex 35 IIA features a **180°** Mirror Reflex Shutter for through-the-lens viewing and follow focus. A new type of intermittent mechanism with registration pin action assure absolutely rock-steady pictures in perfect register.

Many other improvements have made the Model IIA the most desirable camera in the field. In fact, every important feature you would expect in a camera designed for first rate filming has been incorporated in the Arriflex 35 Model IIA.

Write for complete information to:

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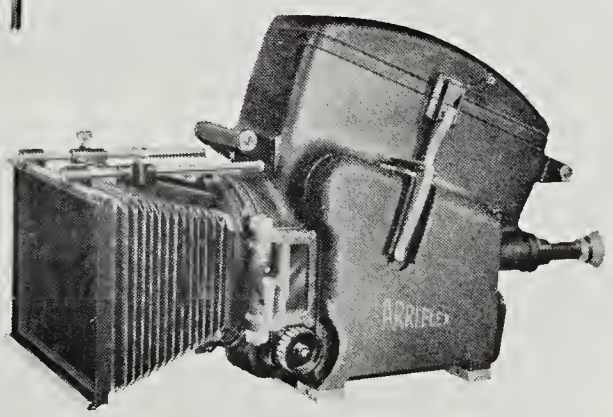


ARRIFLEX 35 Model IIA with SYNCHRONOUS MOTOR UNIT

Provides absolutely uniform and constant speed. Mator is mounted on base-plate housing containing gear mechanism which connects directly to main drive shaft of camera. Motor unit has built-in footage counter and tripod socket. Safety clutch autamatically disengages matar shauld film 'jam'. Designed for 115-volt, 60-cycle AC operation.

ARRIFLEX 35 Model IIA in SOUND-PROOF BLIMP

Blimp housing is cast magnesium alloy, finished crackle black. Accommadates Camera, Synchronaus Matar Unit and 400-faot Magazine. Internal walls are lined with corduroy velvet over six alternate layers of foam plastic and lead. Doors are sealed with faam-rubber gaskets, and close by means of heavy, 'knee-actian' clamp locks. Camera is cushion-mounted.





without tools,

art is helpless . . .

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for finer films

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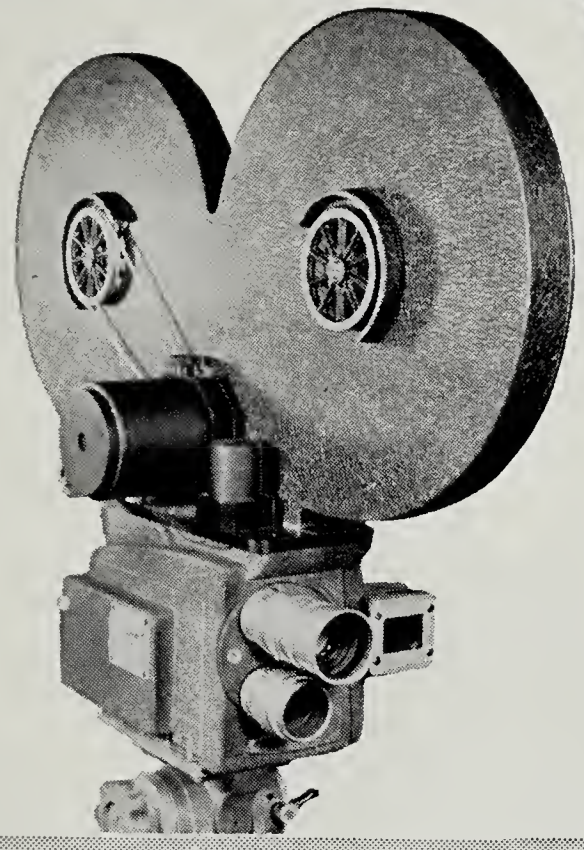
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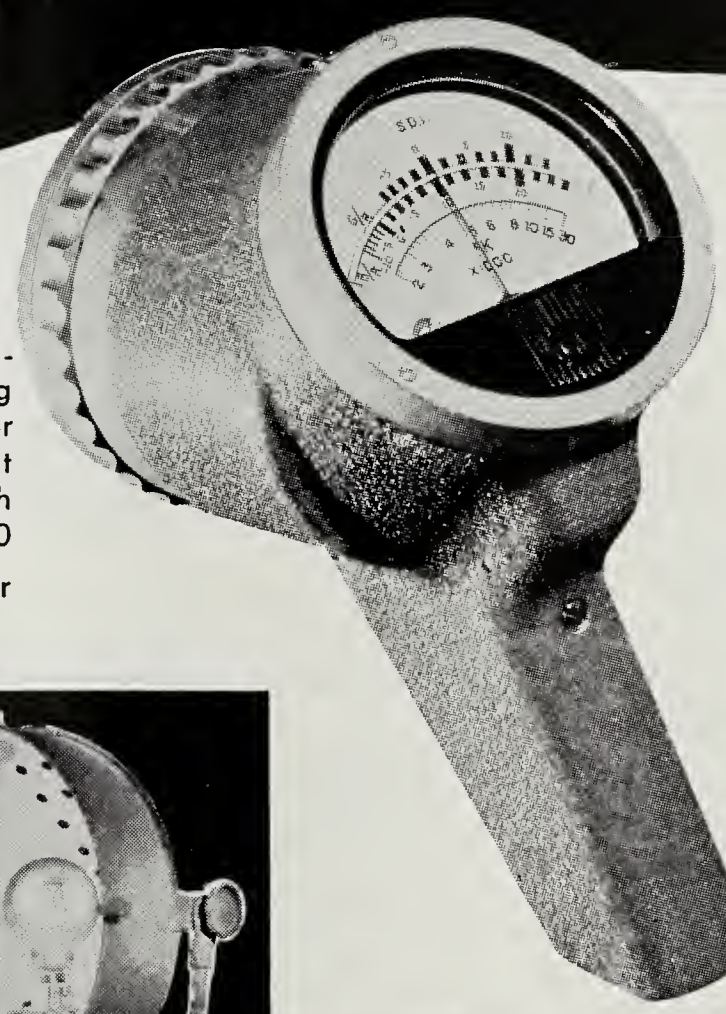
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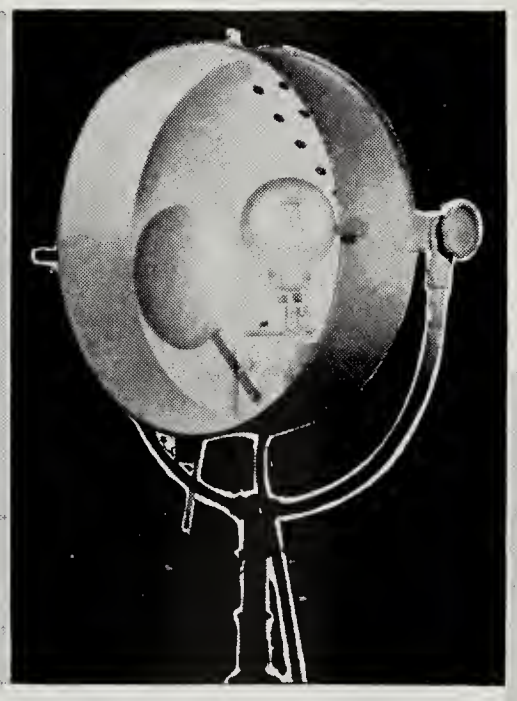
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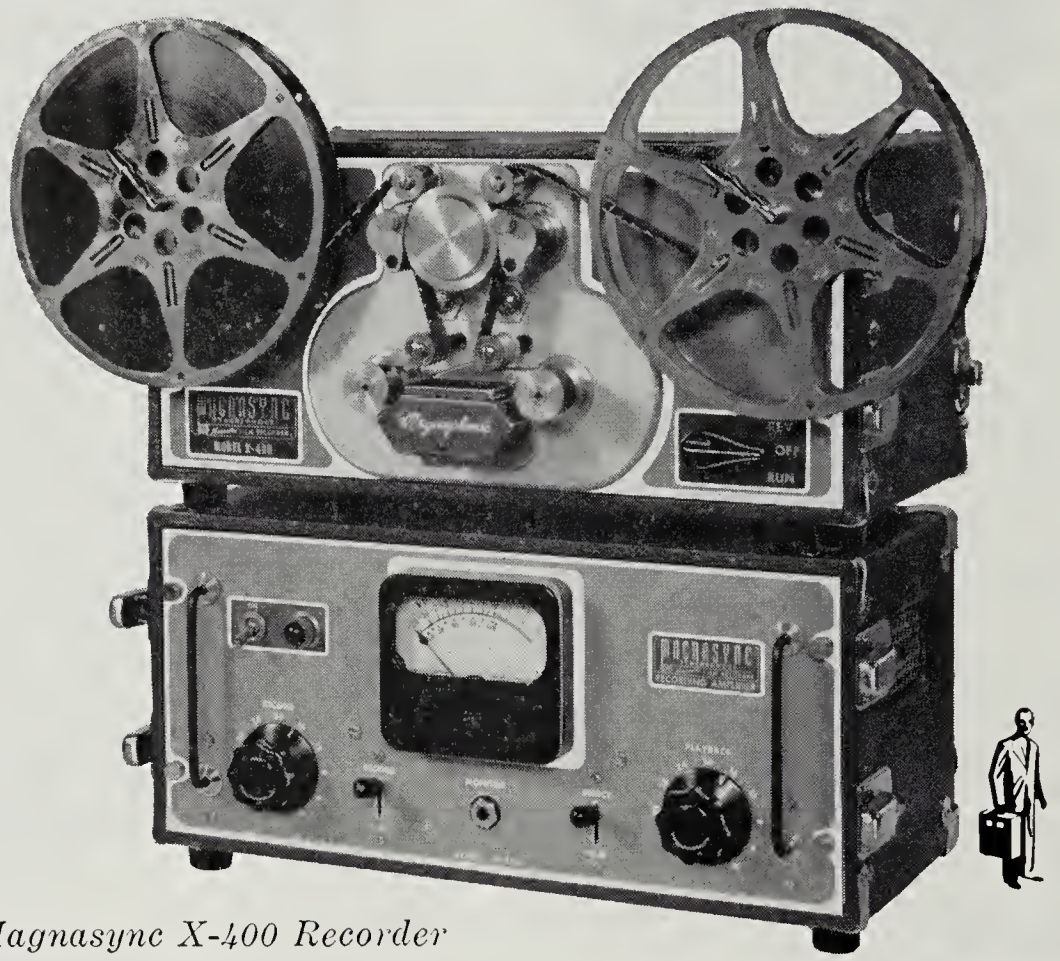
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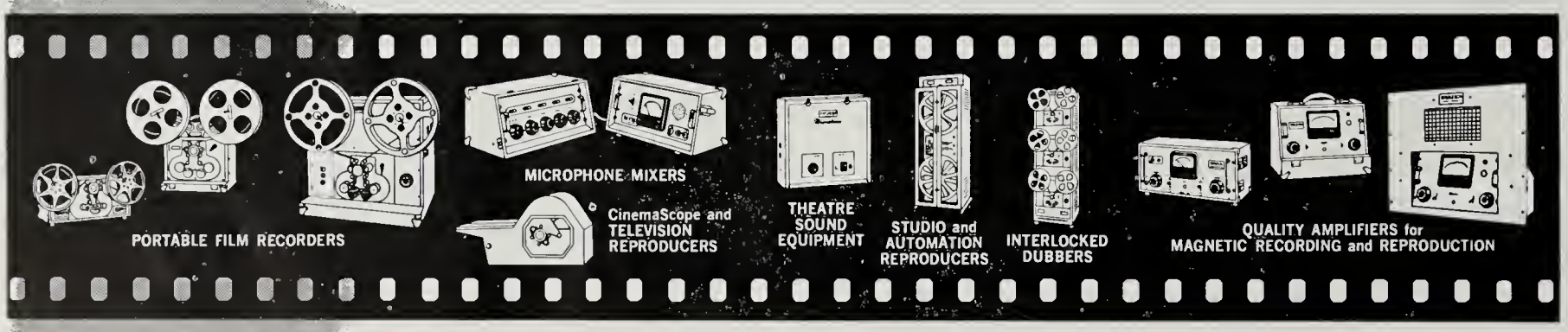
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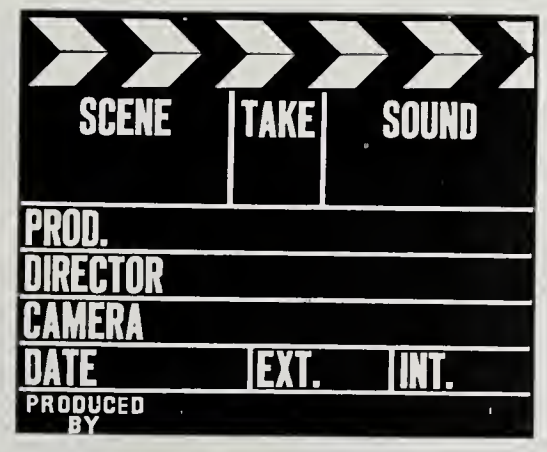
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SINCE THE ADVENT of color films, pre-production photographic tests are more important than ever. Here, Alec Guinness, portraying an eligible Crown Prince in M-G-M's "The Swan," gets final makeup touches as director Charles Vidor looks on. Meantime, director of photography Joseph Ruttenberg (seated, center) and his camera crew await the signal to start the camera.

Photographing Pre-production Tests

By JOSEPH RUTTENBERG, A.S.C.

ONE OF THE important pre-production steps that precedes the actual shooting of any feature film in a major studio is the photographic tests. At this period, which may precede the production's starting date anywhere from two weeks to six months, all of the stars and principal players are given photographic tests for makeup, costumes and hair styles.

A question that is frequently asked by those outside the realm of film production is "Why are new tests necessary for each picture, especially where the same players are cast in it? Wouldn't the tests made for the previous production suffice?"

The answer is that a complete new series of tests are required for each new production because, for one thing, the type of story is invariably different, calling for different characterizations which in turn call for a different type of makeup, hair dress and costuming. And where the leading lady has a new male star playing opposite her in the second production, it often becomes necessary to devise special makeup for each player so that both will photograph equally well under a single pattern of set lighting. Obviously, this can only be determined by photographic process—the pre-production photographic tests.

At Metro-Goldwyn-Mayer studio, one small sound stage is reserved for talent tests. However, quite often we will shoot tests on other stages where appropriate sets, not in use, are employed. Simplicity of background, of course, is an essential for all tests, because it is the player or players being tested that we are interested in. For this reason most makeup,

costume and hair styling tests are photographed with the subjects backdropped by a plain wall or flat. The standing sets are usually employed for testing candidate players enacting bits for casting purposes.

After the tests have been developed and printed—and it should be emphasized that this film is given the most careful handling in processing to insure highest fidelity of color, etc.—they are screened before a group consisting of the producer, the director, the director of photography, head of the makeup department, the production makeup man, head hairdresser and assistant, and the wardrobe designer and assistant. This group analyzes the test shots, discusses suggestions that may be made for any changes, and such changes as may be decided upon are put into effect and a new series of test shots made. The second tests are screened and evaluated as before; and sometimes it is necessary to make additional changes—and to photograph additional tests.

One of the advantages these test sessions give to the director of photography is the opportunity to develop in advance of the picture's starting date a pattern of lighting most advantageous to the players. This in turn keys the lighting and photography later when the production gets under way on the sound stage. Here, while the makeup man, the hair dresser and the wardrobe personnel are giving the subject their personal attention, the director of photography is given opportunity to arrange and re-arrange his lights; to try several different lighting patterns—all the things he is unable to do except when under pressure of time, once the production gets under way.

Since the advent of color films, preproduction photographic tests are more important than ever. And they require more careful attention. We have found, for example, that some color films react differently to different colors. Colors that are appealing to the eye, often record differently on color film. And so, through our tests, the wardrobe department is able to determine what colors to use, and especially what fabrics, as often it is the fabric rather than the fabric color that proves a bugaboo.

One particular case that comes to mind was when we were shooting tests of Ann Blyth for "Kismet." One gown she wore for the tests did not record on color film as it looked to the eye. It was discarded and a new one of different color and fabric substituted. Miss Blyth was re-photographed wearing the new gown and the second test proved it to be entirely satisfactory.

Before we started shooting "Kismet," we also made photographic tests of one of the important sets. Here the floor had been given a particularly colorful job of paint. To the eye, it looked just right, but when the camera recorded it on color film, the result was flat and entirely lacking in the effect that the art department had in mind when it conceived it. Needless to say, it was re-painted in color tones most complimentary to the color film being used, re-photographed, and found acceptable.

It is generally assumed that natural plants, shrubs, etc., are highly compatible with color film. But this is not always true, especially where these decorative effects are used indoors on the sound stage and photographed under artificial light.

We encountered just such a problem on one of the "indoor exterior" sets for "Kismet"—photo of which appeared on the cover of the November issue of

(Continued on Page 45)



NOT ALL pre-production tests are shot on the sound stage. The camera tests for this "day-for-night" scene were first made on the studio back lot. Result of tests was development of special reflective material for use in windows and vehicle headlamps to "burn through" heavily filtered photography. Result is said to be the best "day-for-night" sequence ever filmed.







PREPARING GRACE KELLY for makeup test. At left makeup woman and hairdresser give final touch to Miss Kelly's hair prior to shooting one of the many pre-production tests for M-G-M's "The Swan." In next photo, director of photography Joseph Ruttenberg takes an exposure meter reading of the light. One advantage of tests sessions is opportunity it affords cinematographer to develop the lighting pattern to be used in the production. At right: the makeup tests have been photographed and a discussion ensues between director Charles Vidor and head of makeup department regarding proposed makeup changes. A full camera crew is always used when pre-production tests are photographed.

Current Techniques Of 35mm Color Film Photography And Printing

WITH THE CURRENT evolution of motion pictures to various types of wide-screen techniques. great additional importance accrues to the techniques of color motion picture photography.

Within the past few years photographic techniques have been altered in two ways: New negative materials have been introduced and new aspect ratios for recording negative images have been developed.

The new negative materials are, generally speaking, color negatives.

The aspect ratio (which means relation of picture width to height) had been settled for over 30 years at four to three, which means that for every four units *across* the picture there were three units in height.

Today this is all changed.

This article will deal with the most important photographic techniques now in use in motion pictures.

There are several color negative films manufactured by different companies throughout the United States and Europe. These negative films can be used in any ordinary black-and-white camera. They have three emulsion layers superimposed on a cellulose acetate base. These three emulsion layers are differently sensitive to different colors of light. This means that the photo-sensitive silver halide particles in the separate emulsions are exposed by different colors of light. Generally, color negative films have a filter layer between the top two emulsions. Where the color sensitivity is not complete, this filter aids in separating unwanted colors from a particular emulsion.

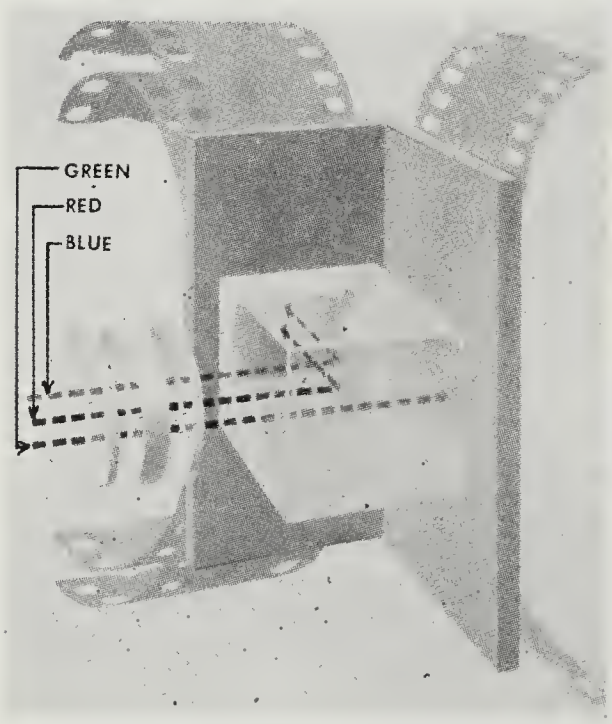


FIG. 1—When color motion pictures are photographed by the three-strip method, a Technicolor camera is used in which three strips of 35mm B&W negative are exposed. Each records a specific color aspect of the scene. Green light coming from the scene is transmitted through the camera lens, as shown above, thence through a special light-dividing prism. It is recorded on a negative which is particularly sensitive to green light. The red and blue colors are directed in a similar manner to their respective negatives.

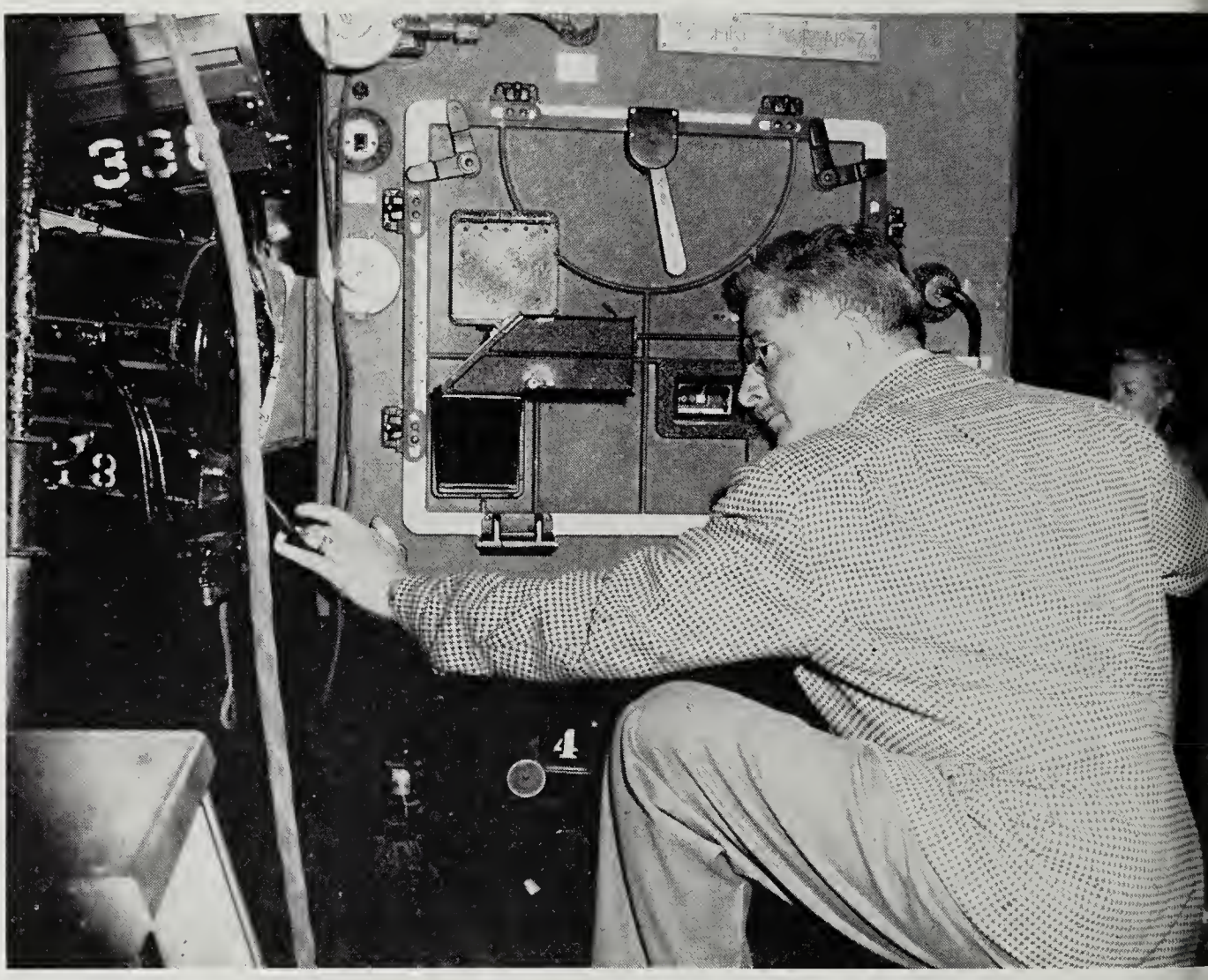


FIG. 2—The Technicolor three-strip color camera, which, until advent of the present 35mm color negatives such as Eastman Color and Ansco Color, was used in photographing almost all color productions made in Hollywood. Technicolor has modified some of these cameras so that a single strip of color negative film may be used in the Vista-Vision manner, with the negative travelling horizontally past the gate two frames at a time. The resulting negative image area is then optically printed in reduced size.

In the United States the most widely used color negatives are Eastman and Ansco.

Both Eastman Color Negative and Ansco Color Negative have only one strip of film surfaced with three layers of emulsion, each being sensitive to a different primary color. Either film can be used in a conventional 35mm camera.

Similar to color negative, 16mm color positive film has three layers of emulsion, each sensitive to a different primary color — red, green and blue. The commercial film is low in contrast and differs from color negative in that a positive color image is obtained by reversal development rather than a negative. From it three 35mm separation negatives are made when dye transfer release prints are to be made for 35mm exhibition.

In Europe, there are three additional color negatives, Agacolor, Gevacolor and Ferraniacolor. These negatives are similar to those used in the United States in that three layers of emulsion are superimposed on a sigle film base.

The Technicolor laboratories, in both United States and England, manufacture

release prints from all of these color negative systems.

Technicolor has long recognized that an improvement in the definition or visibility of Technicolor dye transfer (imbibition) prints when projected in the theatre, especially on large screens, would be possible from a negative resulting from almost any system of photography that employed a larger than standard area of negative on which to record the picture information. There are a number of photographic procedures which might bring this about. One such system is Paramount's VistaVision which employs a single strip of 35mm color motion picture negative which. contrary to custom, moves horizontally through the VistaVision camera. The scenes are recorded on an area equal to two full frames of normal motion picture negative.

Working from such a double frame negative the Technicolor laboratory is manufacturing 35mm Technicolor dye transfer release prints of normal size and position, which may be combined with either photographic or multiple sound tracks. Such release prints can, of course, be projected on any screen including large screens, and in any aspect ratio from 1.33 to 1 or to any larger ratio desired. Since these new improved Technicolor dye transfer release prints are of normal size and position in every respect, no special projection lens in the theatre is necessary.

Technicolor has been working on the new system for more than two years, resulting in the introduction of laboratory procedures which are uniquely dependent upon steps in current Technicolor techniques. The new method is already in operation in moderate volume at the Hollywood plant.

When photographing with 35mm Eastman or Ansco color negative any standard 35mm camera may be used, including the "hand-held" or portable models. Specific "color" camers are not required. After the negative is developed, positive prints may be made in a manner similar to that for black-and-white film, or by the dye transfer method from the color negative, or from separation negatives, as will be explained later.

When color motion pictures are photographed by the three-strip method, a special camera is used. These cameras are manufactured by Technicolor and are furnished to the motion picture producer. They are available to him upon demand at his studio or on location.

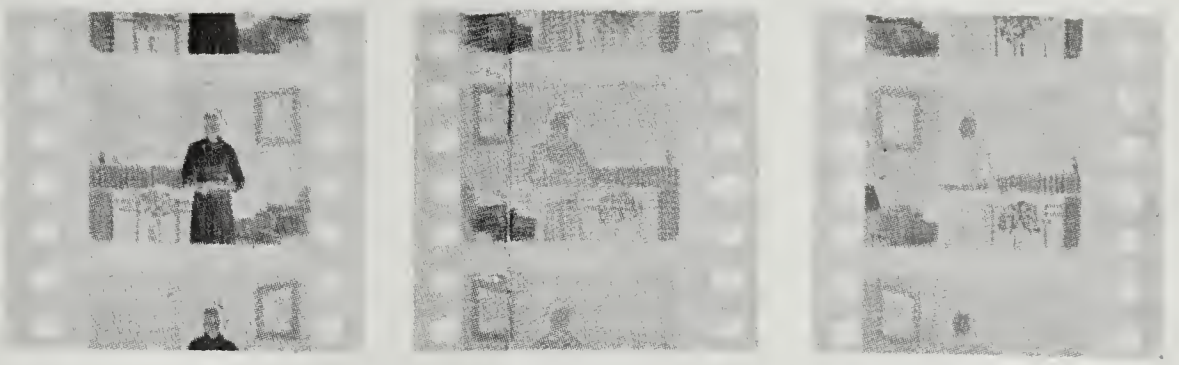
This camera is unique. It is the only one used commercially in which three strips of motion picture film are successfully exposed simultaneously to exactly the same scene. The strips of film in this camera are negative films and each records a specific color aspect of a given scene. As seen in Figure 1, green light coming from a scene is transmitted through the lens of the camera and thence through a special light-dividing prism. It is recorded on a negative film which is particularly sensitive to green light. The red and blue colors coming from the same scene pass through the same lens and enter the same special prism; but instead of being transmitted they are reflected to an aperture on the side of the camera. In this aperture two films are traveling. These films are placed one in front of the other; the front one records the blue light of the scene, while the back one records the red light.

When developed these negatives have silver images, and when held up to the light, appear the same as black-and-white negatives. These special cameras used in this taking process have traveled with location units to every continent of the globe. Cameras have been used in the air; under water; and even in the craters of volcanoes.

Technicolor has modified some of its three color cameras so that a single strip of 35mm color negative film may be used in the VistaVision manner. In these modified cameras the film runs past the camera aperture horizontally and an area corresponding to eight perforations (or two normal frame areas) is exposed. The negative image area is then optically printed in reduced size.

Successful printing of 35mm color motion picture film requires experience and laboratory skill. Faulty prints wipe out accurate color values achieved in photography and production.

Color printing procedures begin with white light. Optically speaking, white light consists of three primary colors — blue, green and red. This is one way of saying that when proper amounts of blue, green and red light are subtracted from white light, any color visible to the human eye will be produced.



RED IMAGE BLUE IMAGE GREEN IMAGE

FIG. 3—The Technicolor three-color camera uses three strips of negative film and incorporates a prism in the optical system to divide the light, as shown in Fig. 1 (left). Two of the films with emulsion surfaces in contact are placed in the camera at a right angle to the lens axis. The front film receives the blue image and the rear film receives the red image. The third film, which is placed directly in back of the prism, receives the green image. The negatives after processing appear as shown above.

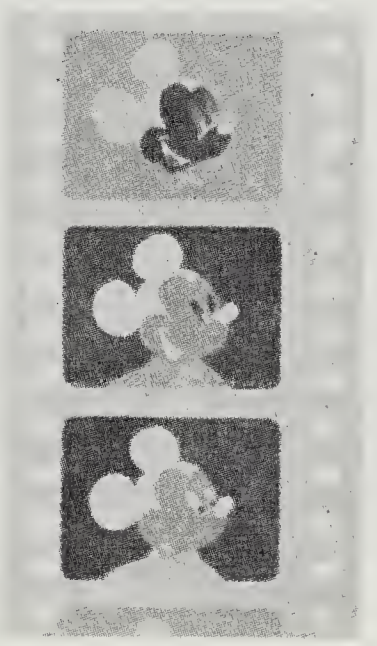


FIG. 4—The successive frame photographic process, used in most animated cartoon photography, uses one strip of B&W negative. In front of the camera lens is mounted a wheel containing three filters—blue, green and red. This wheel rotates as each scene is photographed three times on successive frames thorugh each of the three color filters. The negative therefore is three times as long as the finished print.

Negatives used in color motion picture photography separately record the red, blue and green aspects of the scene.

After development, negative images may be silver (black and white to the eye) or dye-colored. Only Technicolor laboratories prepare dye-transfer release prints from both kinds of image.

Developed negatives are evaluated to determine the printing light required. The negative is then run through a matrix printer, a device in which special matrix film is exposed to light coming through the negative. Matrix means what it does in other forms of printing—a relief image from which multiple copies are made.

(Continued on Page 58)

PHOTOGRAPHING Van Gogh paintings in CinemaScope by the Arnold Ektachrome Process for M-G-M's "Lust For Life." Developer of process is John Arnold, A.S.C., (center). Operating camera dollying device at left is technician Matt Kluznik. Handling the transparency controls at right is operative cameraman Harnkness Smith. Details of operation are described in photo below.

A New Method Of Insert Cinematography

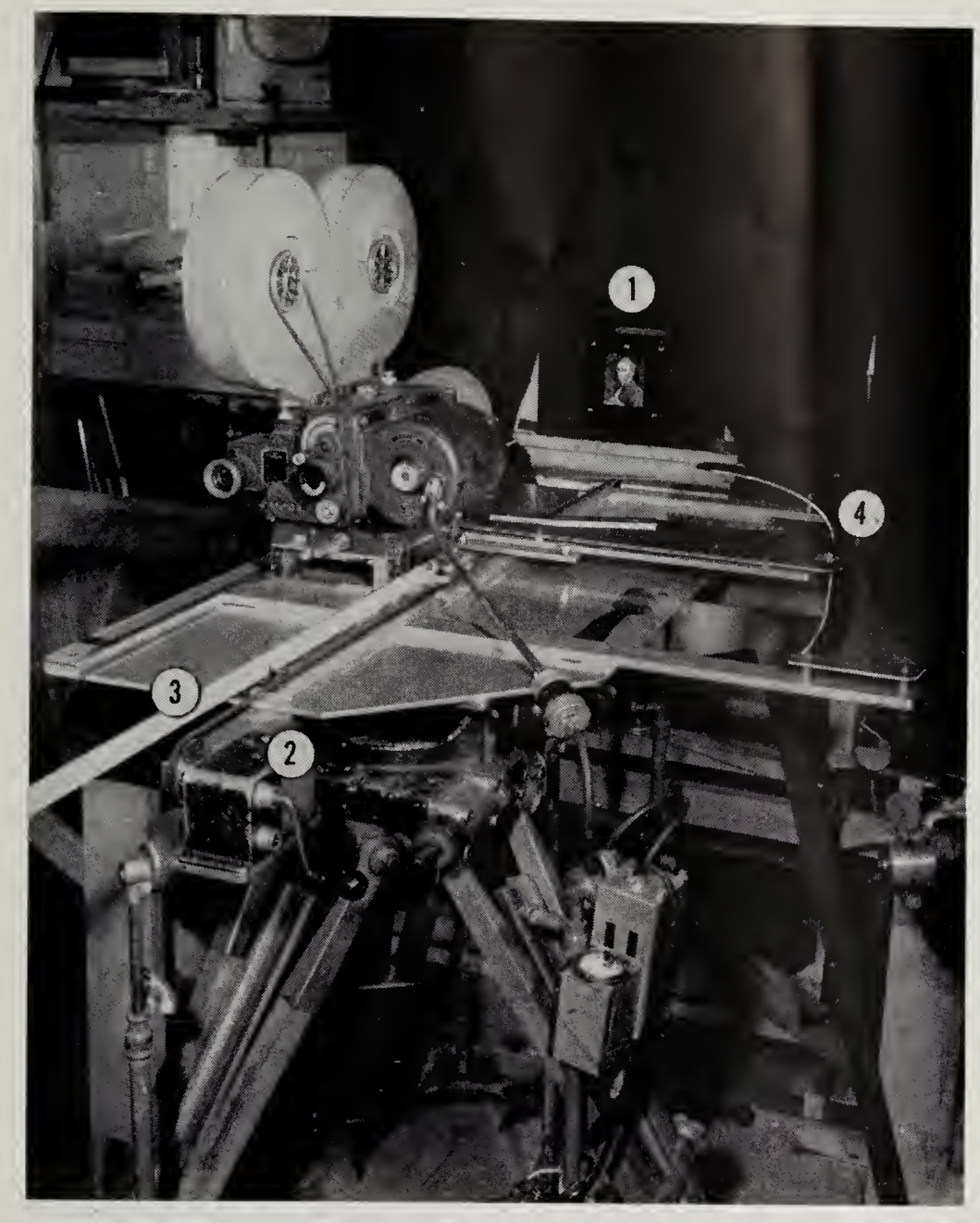
Developed especially for reproducing rare paintings in CinemaScope for M-G-M's "Lust for Life," Arnold Ektachrome Process promises increased fidelity in photography of graphic arts inserts.

By JOHN ARNOLD, A.S.C.
Executive Director of Photography, Metro-Goldwyn-Mayer Studio



DUAL CONTROLS by which Ektachrome transparencies are moved to left or right, up or down, before the camera during photography. Effect is similar to pan and tilt action with camera. Slate marks immediately above controls guide operator in moving the Ektachromes. Figures indicate stop periods when Ektachrome transparency remains stationary before the camera.

When Metro-Goldwyn-Mayer first considered "Lust for Life," based on the life of the Dutch painter Vincent Van Gogh, the most challenging problem posed was how to reproduce on the screen in the CinemaScope format the many Van Gogh paintings essential to the story. Even more important was the problem of how we were to bring these paintings to the screen with all the rich-



EKTACHROME TRANSPARENCY being photographed is mounted in holder (1) which is movable North, South, East or West or diagonally by dual controls shown in photo at left. Simultaneously, camera can be dollied in or out by means of two-speed gear box and crank (2). Camera slides on metal base (3), and as it moves toward or away from subject, focus is changed automatically by sliding cam (4) geared to lens.

which the achievement of all this might involve: the essential Van Gogh paintings are scattered all over the world—in private homes and in museums—which would make it necessary for a CinemaScope camera crew to spend well over two years just to photograph them, assuming that permission to photograph them with a motion picture crew could be obtained. It was quite obvious that this procedure would prove both impractical and too costly. Also, it was felt that many owners of Van Gogh paintings would strongly object to our bringing into their homes or museums the lighting and camera equipment that motion picture photography would require. And finally there would be the problem of obtaining the correct color values under the quesitonable lighting conditions which a photographic crew would be certain to encounter.

I proposed that instead of following the direct motion picture photography method, we make 8″ by 10″ Ektachrome transparencies of the paintings, then photograph these with the motion picture camera at the studio under fully controlled lighting conditions. All this method would require would be a still camera, a tripod, and a couple of 150-watt or 300-watt 3200° K lights—equipment easy to use in either home or museum.

(Continued on Page 42)

ness of texture and the fidelity of color for which Van Goghs are famous.

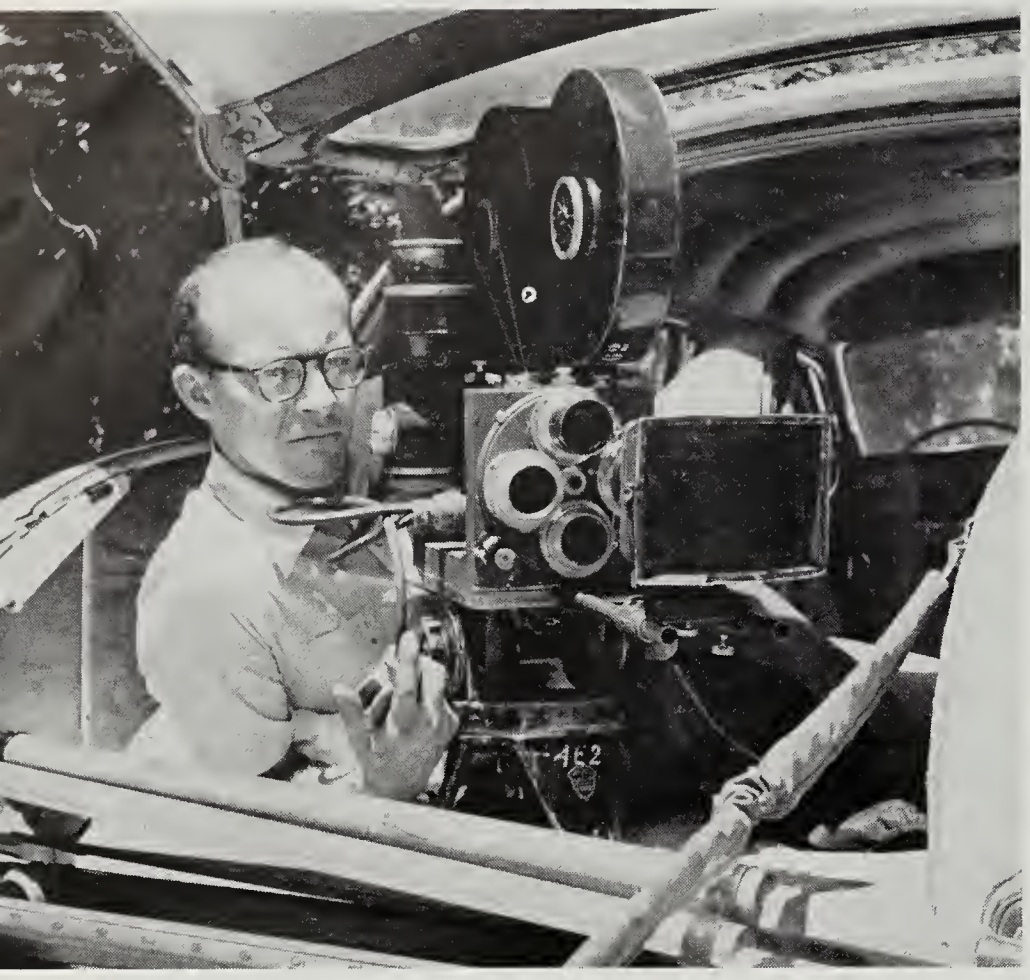
These were essentially photographic problems and were given to me for solution during the early pre-production conferences on the story. After many months of trial and error, of testing one method against another, there was evolved what the studio has come to term the "Arnold Ektachrome Process." It actually made the production of "Lust for Life" possible. Here's why:

As the story unfolds, Van Gogh, played by Kirk Dougles, is shown almost constantly in the process of turning out a canvas, a charcoal or an etching. The studio believed that interest in the story would be heightened considerably if (1) original Van Gogh paintings could be shown; and (2) reproduced on the screen with such vividness and fidelity as to arouse the admiration of art patrons and non-patrons alike; and (3) if the photography could be made flexible enough to permit moving in with the camera for closeups of certain details of a painting whenever desired.

And here is the package of problems



EXAMINING Ektachrome transparencies prior to photographing them with motion picture camera are John Arnold (right) and technician Matt Kluznik. New process makes possible reproduction of paintings on screen with life-like fidelity in color and textures.



A STATION WAGON makes a most versatile camera car for motion picture photography. Here Ralph Papin, cameraman for Gospel films, Muskegon, Mich., has mounted his camera on the tail-gate for a series of traveling shots.

Resourcefulness And Ingenuity Vital Aids To 16mm Cameraman

By CHARLES L. ANDERSON

WHILE THE DEMAND for films by industry, education, and advertising is greater than ever, competition among those photographing and producing such films is also keen, and every technique for increasing a film's worth or helping to keep the budget within reason is being employed by the most successful producers.

The excellent response of today's color films to every shade of color has tempted more than one cinematographer to experiment with filtering light sources for special effects. This technique has been familiar to Hollywood cameramen since the very first three-color Technicolor picture was produced, but industrial film producers have shied away from it. Color temperature meters, with their matching lens filters, lighting voltage controls, and more roll-to-roll emulsion consistency have for several years put 16mm color work in the "strictly under control" category, and just recently a move has begun to take more advantage of that fact.

There's not much danger any more of a commercial producer or client thinking something went wrong because all the light on a scene isn't pure white. Because nearly every industrial picture closes with scenes of the sponsor's product in use or on display, the richness and sparkle of some color added to the scene gives a welcome change. In another type of picture, the cameraman of an industrial film on home permanents added an element of glamour to the close-ups with a light yellow filter on the back-light. Stainless steel and aluminum machinery parts have also received similar light treatment in well-made "nuts and bolts" films.

The technique may also be seen in quite a bit of still photography. A perusal of your record dealer's shelves will reveal many L.P. record albums illustrated with photos obviously lit with colored light. Especially note the pictures on mood music and operatic selection albums. Some are essentially lit with white light but have colored side- or back-lighting; others show an overall color tone. Both methods may be applied to lighting a shot for 16mm work, the choice depending—as it does in other matters—on how the shot will be used in the picture.

Other examples are seen occasionally in magazine ads. Note, however, where the technique is *not* used: food pictures, scenes where the color of fabrics is important, etc. When exact color reproduction is called for, white light is obligatory.

As to the practical method of controlling light quality, sheets of colored gelatine are usually placed over spotlights. Sometimes a set-up will duplicate natural off-color effects, as when the scene outside a window is illuminated much cooler than the set within. A film on baking bread contrasted scenes of pioneer days and modern times. In each

(Continued on Page 48)



BOB CRANDALL, photographer of nature subjects for Walt Disney, contrived the apparatus shown here for photographing small wild life in ultra closeups. Pressing foot-pedal on floor starts and stops the camera. Note also the special focusing attachments especially designed for the Cine Special.—Photo by Ray J. Manly for Western Ways.

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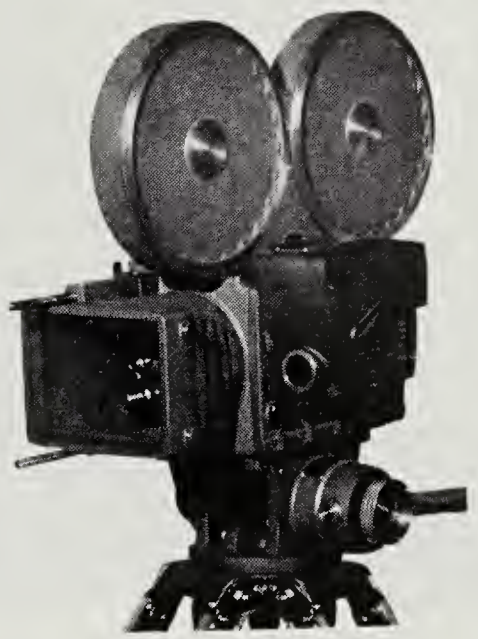
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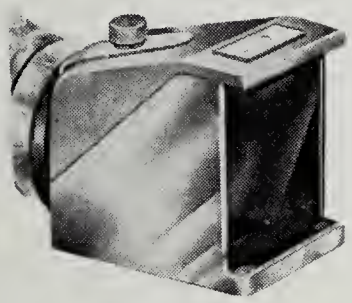
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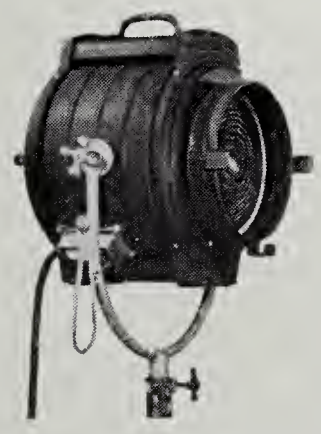
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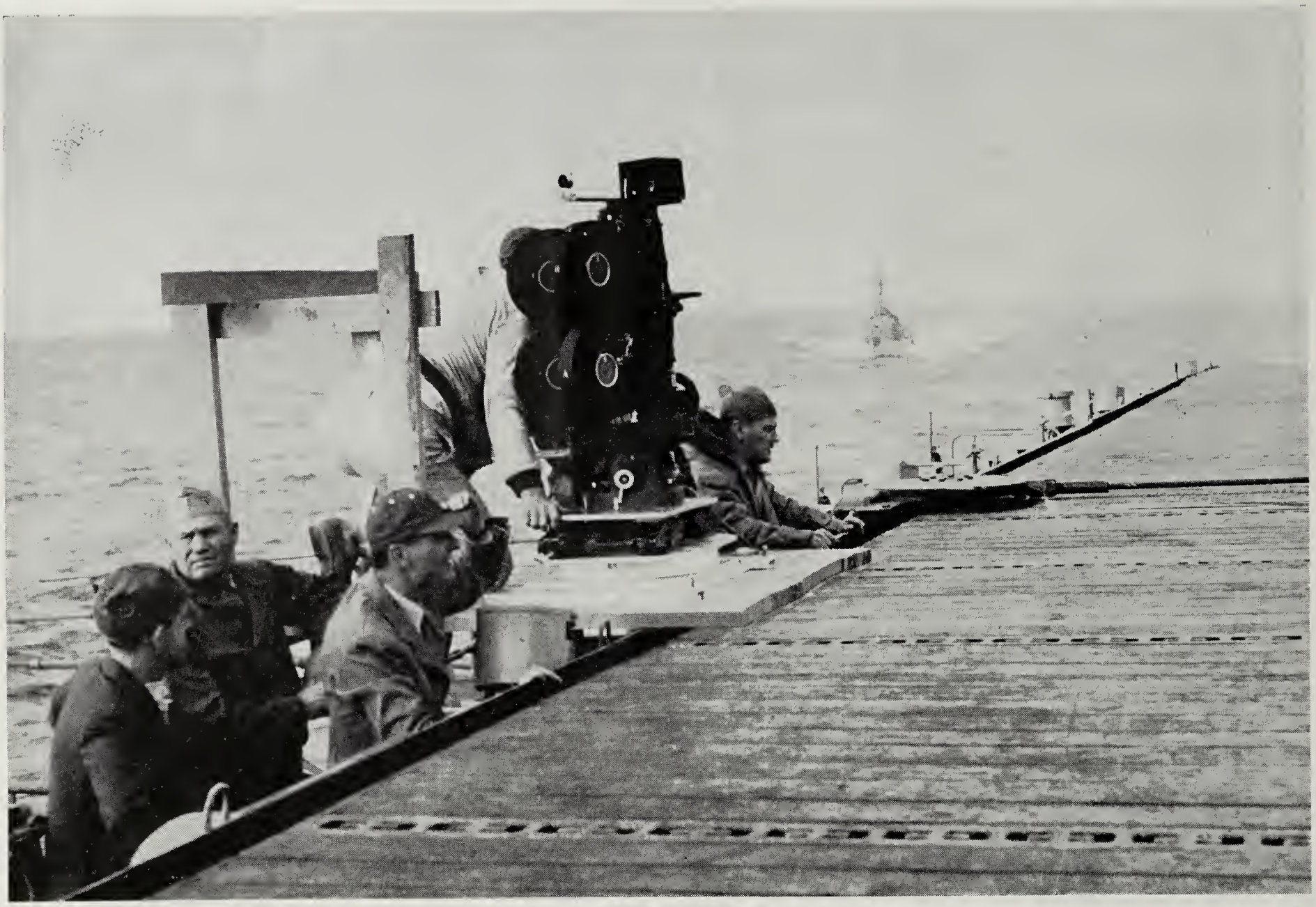
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PHOTOGRAPHING the landing of jet planes on the carrier U.S.S. Lake Champlain for the climactic finish of "Cinerama Holiday." Here the three-lensed camera may be seen mounted on hastily-built platform spiked to the deck edge.

Filming The Jet Carrier Climax For "Cinerama Holiday"

By HARRY SQUIRE, A.S.C.

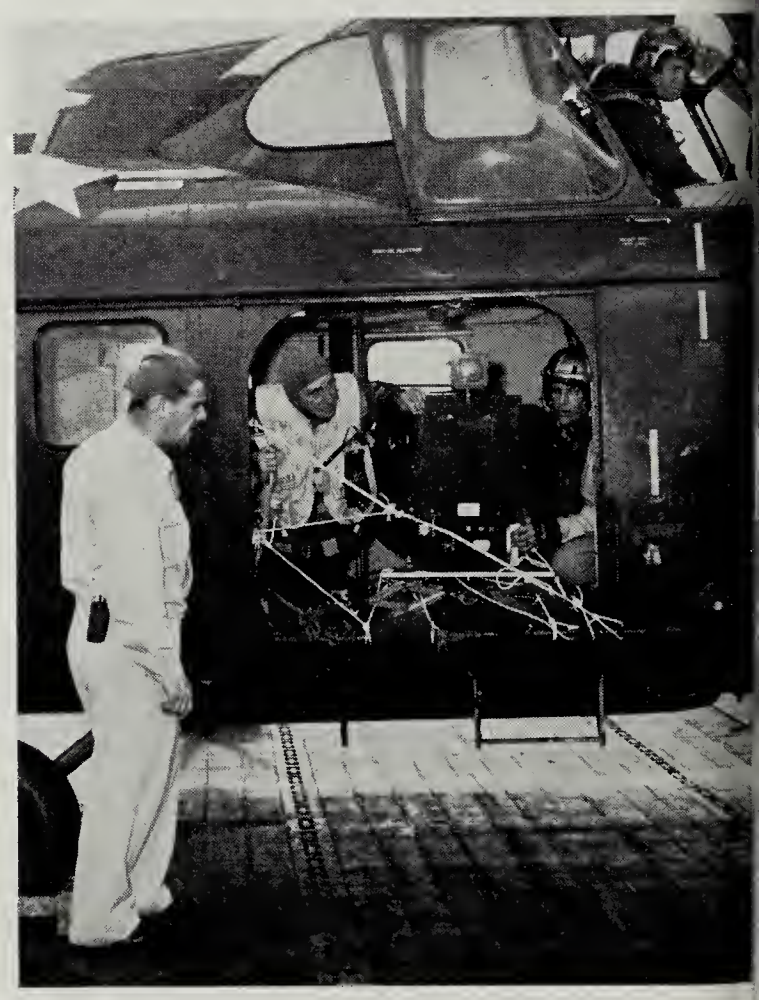
SOMEHOW CINERAMA has always taken very kindly to the air. Outside of the tests made by Fred Waller in the late 1930's with his eleven-lens 16mm Vitarama system, the first filming done with Cinerama was aerial combat.

That was during the war when Fred turned his ideas into the Gunnery Trainer that gave aviators a pretty realistic feeling of what it would be like to have Jap Zeros and Messerschmitts coming at them.

It wasn't until a couple of years after the war that we started photographing the first Cinerama feature film. Paul Mantz converted a B-25 for the aerial scenes that were planned, and the three-lensed Cinerama camera was mounted in the nose. Now there was room for only one man to handle the camera. I acted as operator, trying the make all the figuring and experimenting pay off.

Now Paul likes to say that you can't be an old *and* daring pilot. Paul is now 52 years old. But I swore never to fly with him again after we went through those mountain passes in Zion Canyon

(Continued on Page 52)



FOR PANORAMA shots, cameraman Harry Squire (2nd from left) mounted the Cinerama camera in the side door of a Navy rescue helicopter.



THE CAMERA SLED on which was mounted the Cinerama camera for photographing the ski ballet for "Cinerama Holiday." Camera is suspended from above in a swinging mount attached to the metal frame. This enabled camera to sway and simulate skier's natural body swing.



THE CAMERA setup for shooting the bobsled run. Operative cameraman Gayne Rescher is behind the camera. Back of him are the storage batteries powering the camera's sturdy motor.

Filming The Ski Ballet For "Cinerama Holiday"

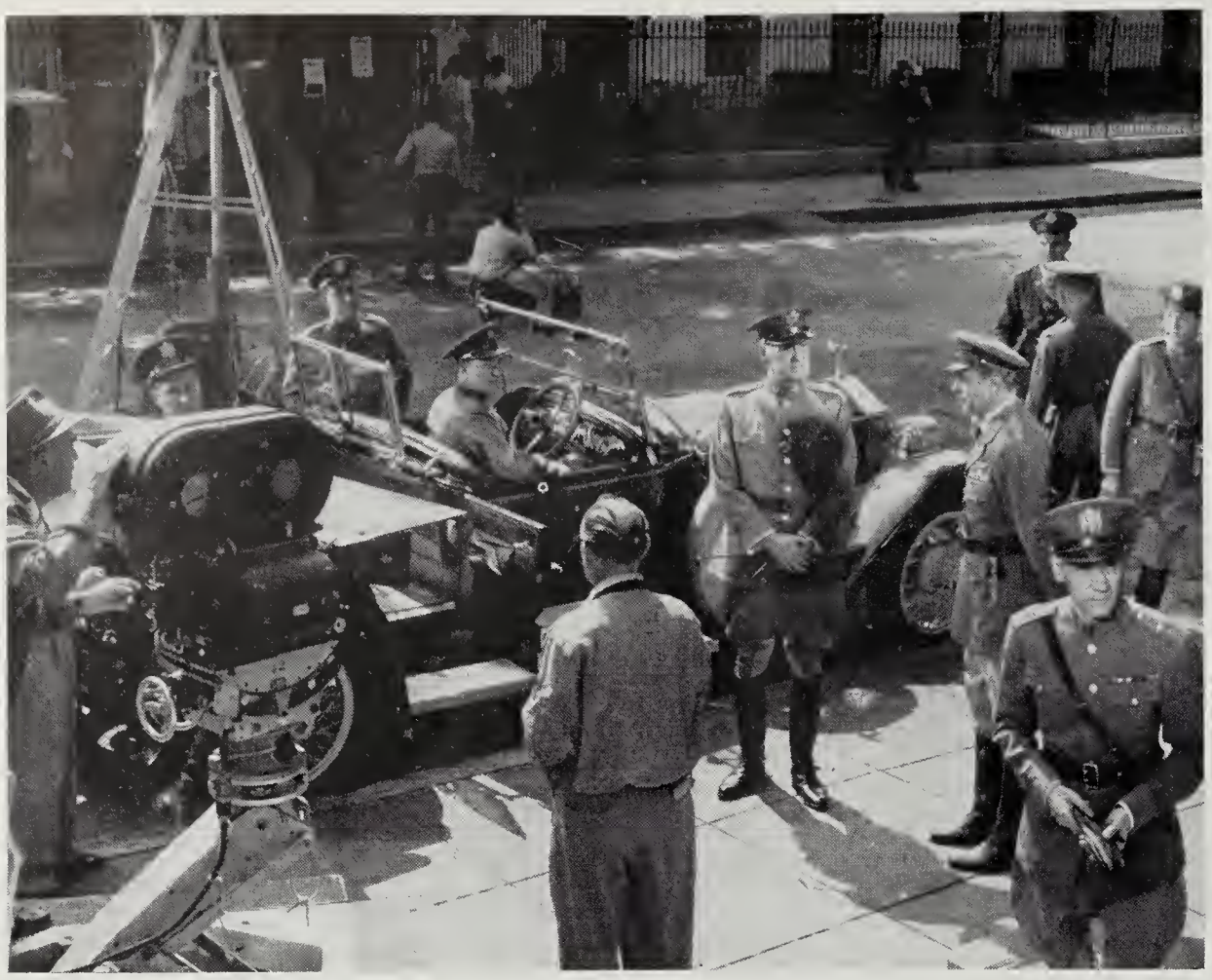
By JOSEPH BRUN, A.S.C., AND GAYNE RESCHER

LOUIS DE ROCHEMONT organized two distinct and separate crews after he was commissioned by Stanley Warner Corp. to make the second Cinerama production. We handled the camera in Europe, and, in addition, filmed the sequence in New Orleans, the "Birth of the Blues."

As a non-skier, Joe Brun was probably the one who did the most to sell the idea of a ski ballet in Switzerland. The magnificent Parsenn slopes near Davos were selected by Mr. de Rochemont and his director, Bob Bendick. As our adviser on the project, supplying know-how and most important of all, skiers, was Max Bertsch of the Davos Ski School.

Upon arriving in Switzerland, we first filmed certain sequences in St. Moritz, the "Holiday on Ice" show at the Suvretta House, and the bobsled ride. The cheese fondue ceremonies were photographed at "La Ferme," in an accurate reconstruction of the interior of a Swiss mountain farmhouse, which serves a sort of "nineteenth hole" for skiers.

(Continued on Page 53)



REHEARSING A SCENE in front of the White House in Washington, D.C., for Warner Brothers' "The Court Martial of Billy Mitchell." Director of photography Sam Leavitt, A.S.C., standing behind the Mitchell camera at far left, credits the well-detailed script of the picture for eliminating a lot of "on the set" photographic problems.—Photo by Mac Julian.

Preparing The Script

The film script should be as carefully planned and prepared as a homebuilder's blueprint.

By CHARLES LORING

EVERY WORTHWHILE motion picture, no matter what its type or aim, is based upon the seed of an idea. After the idea has been selected and broadened out into a theme, a script is then constructed as a working plan for translating the idea into a motion picture.

The script is the film-maker's blue print. It is a plan of action and dialogue, of camera angles and lighting; it should provide information by which every technician on the picture can plan the details of his particular contribution. Time was when Hollywood directors could stage a whole feature without having one word of the story down on paper; but that era has long since passed. Today every entertainment film is scripted in the very finest detail before a camera starts to turn. The technique is not exclusive with Hollywood, however. Every motion picture, be it documentary, commercial, training or home movie, should be shot from a carefully prepared script. Aside from the saving of time, effort and expense that results, a well-planned script will mean a better integrated film — one that "hangs together," that tells a tight, unified story without going off on tangents.

A great deal has been written on script writing. Many articles and books on the subject have stressed the screenplay *form* rather than going behind the scenes and dealing with the more or less abstract elements that go to make up a good script. It is these elements, therefore, that we shall attempt to analyze here, since, once they are mastered, the actual construction of the script is a relatively routine mechanical job. And we shall deal with those phases of script preparation that are common to all types of motion picture production.

Our first consideration is to satisfy our audience. No matter what the subject or the approach, or whether the film is to inform or entertain, it cannot really be successful unless it is accepted by the audience for which it is intended. Film audiences today are much more critical than they used to be. Consciously or subconsciously they have come to expect the motion picture to live up to certain standards of construction. When these standards are lacking the audience will reject the film—*even though they may not be able to tell specifically what is wrong with it.*

Therefore, it is important that a motion picture should put across a unified, dominant idea; it should tell a story and tell it completely. Too many films are fragmentary, disorganized, lacking in coherence. They nibble at the edges of an idea rather than stating it boldly and then following through to a definite conclusion.

No less important is the fact the motion picture is an action medium, and it should be written and produced with the emphasis on action. Static scenes or sequences, too much dialogue or narration in place of visual action—these

(Continued on Page 50)



"WHEN THE SCRIPT spells out the photographic requirements of a scene or sequence in great detail, it goes a long way toward enabling us to plan the photography in advance," says director of photography Robert Surtees, A.S.C., (seated hatless atop truck) whose two-camera crew is pictured here shooting a scene for M-G-M's "Tribute To A Bad Man."

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THE AUTHOR, Nadine Pizzo, who photographed much of "Fall of the House of Usher" in collaboration with her husband, Sal Pizzo.

We wanted a subject to film that would give us full scope for the dramatic use of illumination. We chose Poe's "Fall of the House of Usher."



SAL PIZZO essayed the role of Roderick Usher. He also directed, wrote the script in collaboration with Mrs. Pizzo, and did the narration. The production was filmed in 16mm Kodachrome.

Our Goals Were Too Ambitious For 8mm

By NADINE PIZZO

IN MY ARTICLE dealing with "The Drama of Color" in last month's issue, I pointed out how through experimentation, taste, and dramatic sensibility the visual vocabulary of color can be manipulated to create whole new worlds of color imagery and dramatic expressiveness in motion pictures.

Before proceeding further on this subject of drama of color, at which time I shall also describe how I utilized it in producing, in collaboration with my husband Sal, the 16mm color film "Fall of the House of Usher," I should like to describe how we chose this story for filming and how we got started in this fascinating hobby of making movies.

We are a husband-wife team, an arrangement not too uncommon in amateur circles where all the highly specialized departments of production must be handled by one or two people. We are fortunate in that our combined backgrounds enable us to function as a complete team. We both have theater experience. Sal's years of activity as an actor in local little theater have been invaluable in our motion picture work. (He created the role of George in the world premier production of John Steinbeck's "Of Mice and Men".) He handles the directing department and much of the acting. He portrayed Roderick Usher in our "House of Usher." He also functions as director of photography. When he is involved on the set, I act as cameraman. You can well imagine the problems involved in those sequences when he is appearing before the camera, simultaneously attempting to analyze his own performance, supervise the camera work and direct the other actors on the set. Happily, we each think and see in terms of the medium, both pictorially and dramatically. Even more important than this, we share the same point of view, the same artistic concepts. Therefore, we can work as one in that most difficult of partnerships—creative collaboration.

After years of yearning to explore the dramatic possibilities of the motion picture medium, my husband purchased his first camera, an 8mm, in 1951. There followed fifteen months of avid study and shooting. In August of 1952 we both felt ready to begin a serious production. We wanted a subject that would give us full scope for the dra-

(Continued on Page 46)

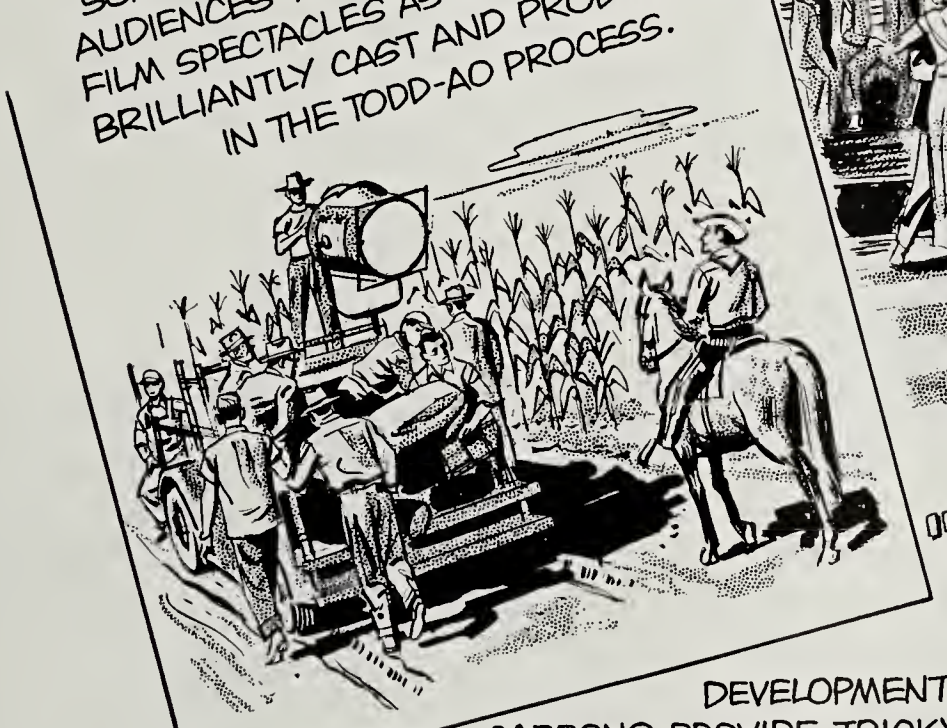
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A Simplified Method For Recording Magnetic Sound On 16mm Film

By OSCAR H. HOROVITZ, F.A.C.L.



FIG. 1—MICROPHONE mounted on neck yoke keeps it at uniform distance from speakers lips. Demonstrated here by author, apparatus is insulated with rubber to prevent annoying clicks caused by bare metal striking shirt buttons, etc.

THE ADVENT of magnetic recording on film opened up broad new vistas of film making for many 16mm movie amateurs. The serious amateur had for years been working with sound as an adjunct to his films, usually in the form of disc recordings, or used music from standard records played on dual turntables as the picture was being screened. Now, thanks to the development of sound striping and the introduction by Bell & Howell, R.C.A., and others of magnetic-recording 16mm projectors, the serious amateur is for the first time able to give his productions a genuine professional finish.

Earlier, when using records and turntables to provide sound for my films, my biggest problem was starting records playing at exact pre-determined (and marked) spots. Today, these problems happily are all behind me. Magnetic sound on film is the real answer to the problem of providing synchronized sound for amateur films.

Once I settled on magnetic sound, I determined to develop a simple, surefire, easy method of recording, and I think as one who has had considerable experience in adapting magnetic sound to 16mm films, what I have to offer here may be of genuine help to many other amateur movie makers considering switching from discs to magnetic recording.

The number one step, of course, in preparing to add sound to any film is the careful preparation of the script. Since practically any standard quarter-inch tape recorder will maintain constant speed for at least two or three minutes (and most of them maintain constant speed indefinitely), I record narration for my films in short sections of two to three minutes duration. These are separated by musical interludes of not less than 10 seconds duration. The short narration recordings I find maintain synchronization with my Bell & Howell "202" magnetic-projector, so that it is no problem later to re-record the narration directly on my soundstriped films and have it always in sync.

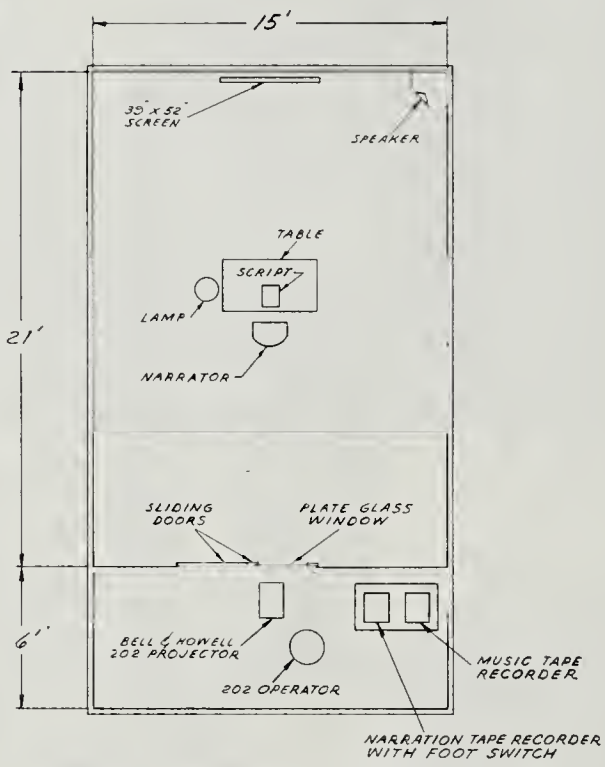


FIG. 2—AUTHOR's recording room and theatre. Projector, in separate soundproof enclosure, leaves narration room free of annoying sounds.

Because any recording error requires starting over again, I never record music back of voice narration except when some short narration occurs during a run of music.

Step number two in this system is the recording of narration on a tape recorder. I prefer this method to recording direct on the sound-striped film because if an error is made, it is a simple matter to erase and re-record, or to make a second "okay" recording. Moreover, the use of pre-recorded narration on tape makes it possible to check it for accuracy by playback. After narration has been recorded and approved, the next step is re-recording it directly on the soundstriped film with my Bell & Howell "202" projector-recorder.

For this I have an ideal set-up—a playroom-theatre in my basement. This has two sliding doors at one end. One has a plate glass window through which I proejct my picture during recording sessions. (See accompanying diagram.) In this way, I isolate the sound of the projector from the microphone, which is carried by the narrator sitting about 10 feet from the screen.

The tape recorder carrying the narration is set up close to the projector, within easy reach of the operator who wears earphones plugged into the recorder. This enables him to follow the narrator as the script is being read and the picture is being projected. and in the event the narrator misses a cue, fumbles a sentence or fails to keep pace

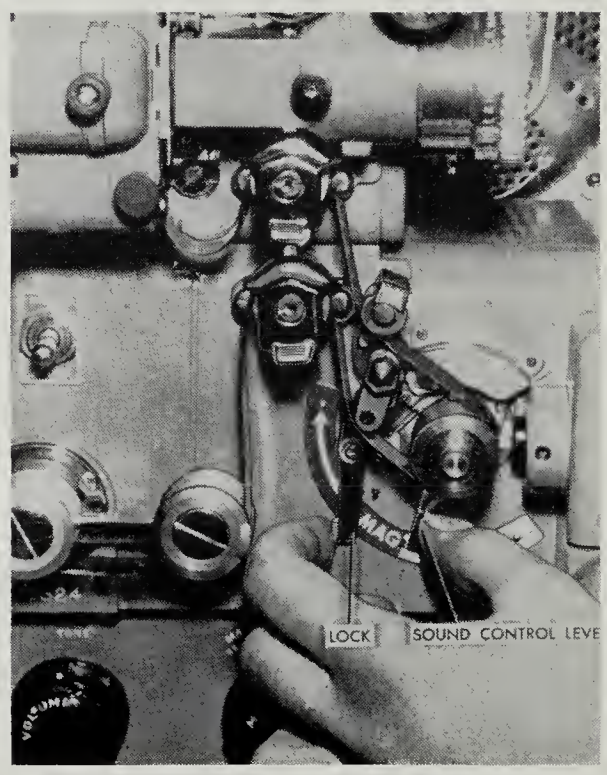


FIG. 3—Controls of the Bell & Howell "202" magnetic-recording projector.

with the picture, he can stop the recording and call for a repeat reading.

To avoid annoying variations in voice levels, which is often caused by the narrator moving toward or away from the microphone as he speaks, I have the mike mounted on a neck yolk, as shown in Fig. 1. This keeps the microphone at a fixed distance from the narrator's lips, insuring uniform voice level at all times. As may be seen in the photo, the mike base is covered with a layer of foam rubber and the metal yoke is covered with rubber tubing. This insulation eliminates annoying "clicks" that would othewise occur in the recordings due to the bare metal striking shirt buttons, etc.

For recording narration, almost any popular-priced tape recorder may be used, and it should be equipped with a foot switch. This also eliminates another source of "clicks" which occur when the rccorder is stopped and started with the conventional switch on the operating panel.

Another innovation I have adopted is the practice of placing pieces of white leader tape at the beginning of each recorded section. These are about fifteen inches in length and are used to make pencil notations of the first few words of the opening of the narration, as a guide in re-recording.

The third step in my system is recording music on tape. Here it is doubly important to avoid the "clicks" mentioned above when playing the recordings into the "202" projector. For safety I always record at least 5 seconds of extra music for runs up to 30 seconds, and 10 extra seconds for runs of 30 seconds or longer. On the white leaders I indicate "Music No. 1," "Music No. 2," etc., corresponding to similar notations on my script.

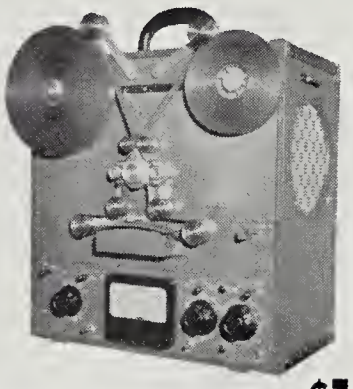
When recording of all the necessary music is completed, the next step is rerecording all tape recordings directly on the soundstriped 16mm film, using my "202" projector. Here a second tape recorder for narration is brought into play, and this is operated by foot switch.

The "202" takes about 3/4 second to get up to full speed. As the tape recorders attain full speed almost instantly, I set the tapes at a point on the leaders 3/4 second ahead of the sound on tape—this point being placed at the playback head of the tape recorder.

The 16mm film is so threaded in the "202" projector that it takes three seconds for the opening frame to appear on the screen. I start and stop the "202" by means of the clutch only, and stop and start the narrative tape recorder by means of the foot switch as it plays back into the recording projector. The music tape recorder is started simultaneously with the "202". Just be-

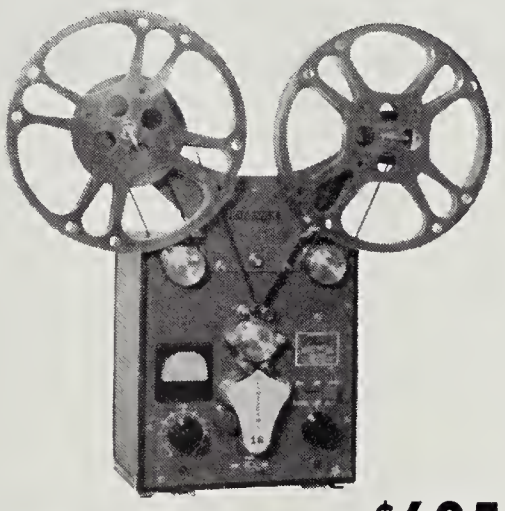
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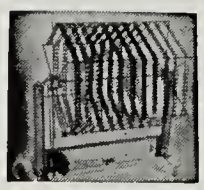


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fore the narration begins, I start fading the music and release the foot switch on the narration recorder 3/4 second ahead of the point where the narration is to begin. The first section of the narration is recorded and then all machines are stopped. The next section of narration with its accompanying music is made ready for re-recording. But before this is begun, the previously recorded section is backed up in the "202" projector, then played back. The projector is stopped sharply (by clutch release) just as the last word of narration is heard. I then place the main volume control of the "202" at its lowest point (being careful not to shut it off completely), then switch the control lever from "Play" to "Record." I press the "Record" button, place the volume control back at normal level, then by means of the small hand-set knob on the front of the projector, I back the film up three or four frames. When the "202" is again started, the click produced by the "Record" switch will be automatically erased.

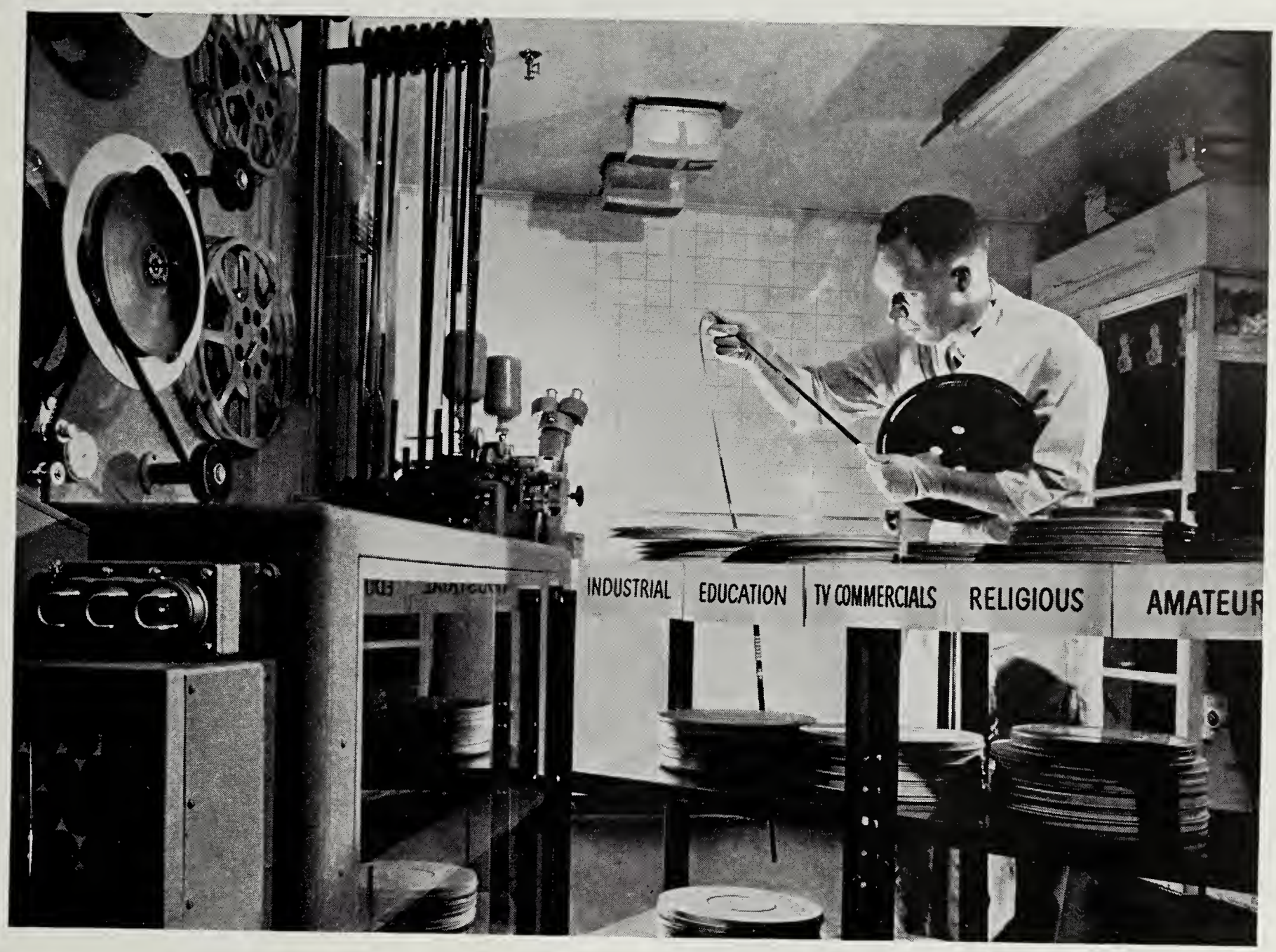
I start the "202" and the music tape recorder simultaneously, setting the volume control on the latter at a low point, then fade-in the volume to its proper level. In the event I make an error in bringing in the succeeding musical number or botch up bringing in the next portion of the narration, I need merely go back to the last few words of the previous narration and start from that point.

At the end of the film—where the music must end exactly right—I use a stop watch and time the length of the film to the fadeout of "The End" title. I place "finale" music of comparable playing time on the recorder, always remembering, of course, to make allowance of 3/4 second to get the "202" up to speed, and also to fade-in the "finale" music.

In following the method outlined here, if the film is a lengthy one, I find it best to plan a fadeout and a fadein in the middle, with the narration ending at the beginning of the fadeout, then resuming again after the fadein is completed. The fades should be at least 40 frames in length. In this way, it is possible to cut the film into two parts for easier handling, then join it together again.

There are a number of advantages to using tape recorders as against direct recorder via the magnetic-recording projector. In the event film is damaged during projection at any time, the damaged section can be snipped out, and the sound for the remaining footage of that scene re-recorded without having to call back the narrator. The original narration stored on tape serves instead.

It is easier to maintain uniform levels in the recordings, especially where re-



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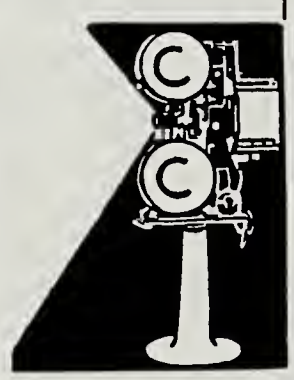
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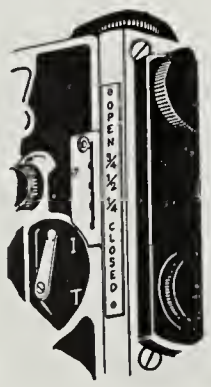


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cording is done in sections, as outlined above. So often in direct recording through the "202" magnetic projector, the narrator may pause for a drink of water, and the following section of narration may be at a different level. Where such recordings are on tape, it is possible to adjust the volume levels as re-recording takes place—indicating the correct volume levels on a cue sheet for guidance.

Once you acquire the necessary recording equipment, it is advisable to spend some time in making trial tests. Tape can be erased and used over again, so there is no problem of cost there. And the same erasure-re-record factor holds true with sound-striped film. So it is a simple matter to take any one of your old films, have it sound striped, then prepare and record narration and music for it. Competence will increase with each successive recording, especially as one becomes familiar with use of the equipment and the various controls.

INSERT CINEMATOGRAPHY

(Continued from Page 29)

We made our first test transparencies locally. Actor Edward G. Robinson and film producer William Goetz, both art collectors owning rare and valuable Van Goghs, gave us permission to come into their homes to photograph the paintings. The results of these first Ektachrome transparencies were sufficiently promising to send me to New York where, in the famous Wildenstein Galleries, I photographed a great many more Van Goghs. The transparencies were processed in New York and then submitted to the galleries' color expert for evaluation. He declared them perfect reproductions.

With these additional transparencies to work with, I returned to the studio and there began the next step—that of designing the necessary equipment for photographing the Ektachromes with a CinemaScope camera. In the meantime, two still photographers were assigned to photograph the transparencies necessary for the production. They were Ed Bagley, who covered New York and other eastern cities, and Dave Boulten, from M-G-M's London Studio, who was assigned to photograph certain Van Gogh art in European cities. Boulten was first brought to Hollywood where he was coached in the photography and lighting techniques which we had developed for making the Ektachromes. The result of the combined efforts of these two men to date is a file of several hundred 8" by 10" Ektachromes which are valued at well over a quarter of a million dollars.

Each Van Gogh painting was photographed in two ways: first with an anamorphic lens combined with the camera lens, and then with the regular camera lens alone. The Ektachromes made with the anamorphic lens were photographed thus to enable us to compress the vast expanse of large rectangular pictures on the available area of an 8″ by 10″ negative. When such Ektachromes were photographed later with the motion picture camera, a regular lens replaced the CinemaScope lens; "unsqueezing" of the anamorphic image is then automatically taken care of in projection.

Incidentally, it should be mentioned here the importance of the special lighting technique which we developed for photographing the transparencies. It is different than would normally be used in photographing an actual painting with a motion picture camera. The paintings have to be given very careful lighting to enable the camera to capture the realistic details of the brush strokes, the thick paint, and texture of the canvas. Once we get all this on a transparency, we are in a position to transfer the picture to motion picture film with greater realism than any other method can afford.

In photographing Van Gogh etchings and charcoal drawings on Ektachrome film, new problems confronted us, especially where we wanted to reproduce the art in its original size for props and set dressing material. These works failed to register on the Ektachrome color film in all the gradations of greys and blacks that were in the originals. So a somewhat complicated process was developed for making the enlargements which involved a combination of photography, photostat, and silk screen process.

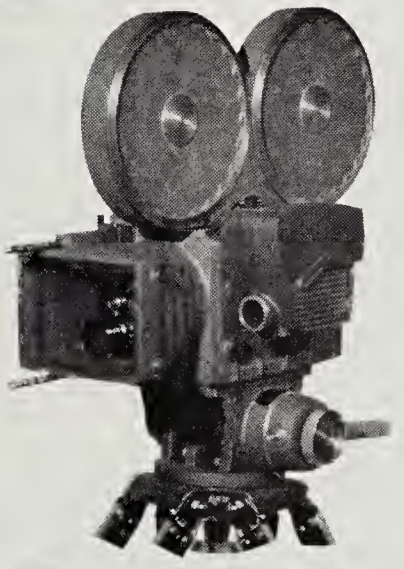
First we shot the black-and-white art with Ektachrome, then made a dupe negative which is used in the first step of the photostat process. The original Ektachrome was then printed by projection over this initial exposure. After the print was processed, the silk screen method was then employed to add the necessary highlights. With each step in this process carefully controlled, we were able to reproduce the art with all the fine gradations inherent in the originals.

The accompanying photos show the equipment which was erected in the test laboratory of the camera department of M-G-M studio, and by which Ektachrome transparencies are presently being photographed on motion picture film. It enables us to photograph the transparencies wholly or in part, in detailed closeups or in scanning or dollying movement of the camera. The camera is provided with but two movements —forward and backward—making it

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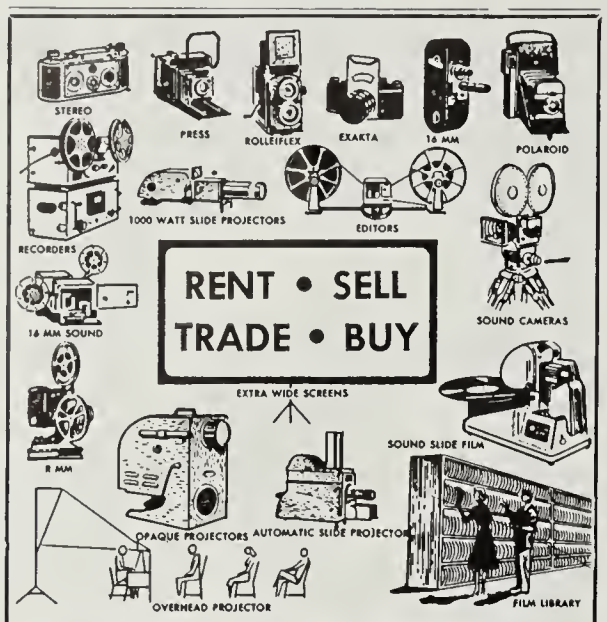
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possible to dolly in and out on a painting, where desired. To scan a painting —that is, as it would be done with the camera moving laterally, or up and down—the painting itself is moved instead in the desired direction by the camera assistant operating a set of controls which are pictured on page 28.

The basic apparatus consists of a stationary metal table on which are mounted two tracks to take the cradle holding the Mitchell 35mm camera. Contact with the tracks is by friction. Rollers, wheels, and ball bearings were eliminated as it was found they induced a minute amount of vibration in the camera when it was moved. The forward and reverse travel of the camera on the table is by chain drive activated by hand crank and a two-speed gear box.

As the camera moves toward or away from the subject photographed, focus is changed automatically by a special sliding cam arrangement coupled to the lens gears. Mounted on rear of camera is a scale plate and pointer which guides the operator in making lap-dissolves. Because it is essential to maintain absolute control over the fidelity of reproduction of the paintings, the lap-dissolves are done in the camera instead of in the laboratory, as is customary with other production footage.

One of the important developments was the designing of a special auxiliary or "closeup" lens, which is mounted in front of the CinemaScope lens on the camera. This enables us to photograph with infinite sharpness minute areas of the Ektachrome transparencies.

In photographing the Ektachromes with the motion picture camera, they are placed in a holder mounted on a vertical framework. By means of a dual control system similar to the tilt and pan controls of a conventional camera, the Ektachromes can be moved North, South, East or West or diagonally by the operative cameraman to permit the camera to scan them in detail. Above the controls is a slate on which marks are chalked as a guide for the operator handling the controls. Often during the filming of a painting calling for this lateral movement, the zoom or dolly movement of the camera will also be employed to give additional scope to the reproduction.

The Ektachromes are indirectly lighted from the rear by illumination from a huge incandescent lamp cast by a white surfaced reflector. During the photography, the cameraman keeps close check on the illumination for color temperature, as this is most important to obtaining fidelity of color in the painting reproductions. Exposure readings are taken by holding the meter close to the transparency.

So successful have been the results achieved to date with the "Ektachrome Process" that plans are presently underway to extend its use to future M-G-M productions. We have found that where printed matter or art work of any kind is to be reproduced in color on the screen, that this process enables us to reproduce it better and with greater fidelity to the original than any other method yet employed.

M-G-M's "Lust For Life" Shot on New Ansco Color Film

The new Metro-Goldwyn-Mayer CinemaScope production of Irving Stone's famous novel about the painter Vincent van Gogh, "Lust for Life," has an additional star on its roster, the new high speed, fine grain, Ansco Color Negative motion picture film which is being used for the first time and under the most exacting conditions possible.

Starring Kirk Douglas as Van Gogh, and Anthony Quinn as Paul Gauguin, the action sequences were photographed mostly in Europe—in Holland, Belgium and France, where the artist lived.

Filmed in the towns and countrysides where he actually lived and worked, "Lust for Life" is the story of Vincent Van Gogh and of the people in his life who both help and hinder his progress along his chosen path of creating paintings now treasured as the world's greatest.

The first use of this new material, which has since been further refined to its present high speed and even finer grain, took place in 1951, when MGM started production on "The Wild North," starring Stewart Granger, Cyd Charisse and Wendell Corey. This picture was released in early 1952 and not only received great critical acclaim but also reaped an Academy Award for Ansco in 1953. The Award was given to Ansco for Negative-Positive color process as a major contribution to cinematography.

An advantage to the industry is the fact that Ansco Color Negative film can be shot with the studio's own equipment, which is also used for black-and-white film production. Processing of the Ansco film can be handled on the studio's own processing equipment with only minor modifications. This means rather considerable savings in costs since the studio can do the whole job on a color production, including shooting, processing, duplicating and every step between, using its own technical and laboratory personnel.

PHOTOGRAPHING TESTS

(Continued from Page 25)

American Cinematographer. The setting was a beautiful storybook-type garden, lush with greenery of every sort. It was essential that the full beauty of the setting register with the utmost fideliy. However, our pre-production tests proved quite disappointing. To remedy the situation, it became necessary for the set dresser to paint the leaves of many of the shrubs to enable them to register in the desired colors on film. Obviously, a number of separate "trial and error" tests were necessary before the right colors were found.

Pre-production testing often extends to location sites, where some special or unusual effect is desired in the photography. Such an instance occurred in preparing "The Swan," which followed the completion of "Kismet" at M-G-M. For this production an important night sequence was scheduled and it was decided to shoot it "day-for-night"—that is, photograph it in daylight, using filters over the lens to give the illusion of night. Sometimes such efforts can be very unconvincing, and 't was for this reason that we decided to employ something new in the way of special filters and a new reflection material which we placed over windows of buildings and in the head lamps of a locomotive and several carriages.

The sequence was scheduled to be shot on location some distance from the studio and for this reason our pre-production tests were staged on the back lot at M-G-M. Several new filters were tried in the tests, resulting in one being selected which studio technical heads have said produced the "finest 'day-for-night' scenes yet seen on the screen." Enhancing the realistic effect was the reflective material, previously mentioned. Used over the windows, etc., it had the effect of "burning through" the subdued effect created in the scene by the filters, giving a most realistic night-time illusion.

In photographing pre-production tests, we always employ full camera crews and whatever grips, electricians, etc., are required. On the makeup, wardrobe, hair dress and talent tests, we invariably employ two cameras—one set up for close-ups, the other for medium or long shots. Separate lighting is arranged for each camera, controlled by separate switches, so that when we switch from one camera to the other, there is not the problem nor the delay of changing the lighting.

Pre-production test periods may run into weeks or even months, depending upon the problems encountered or the lavishness of the production. Also we have a problem today of so many of the top stars being employed in other studios

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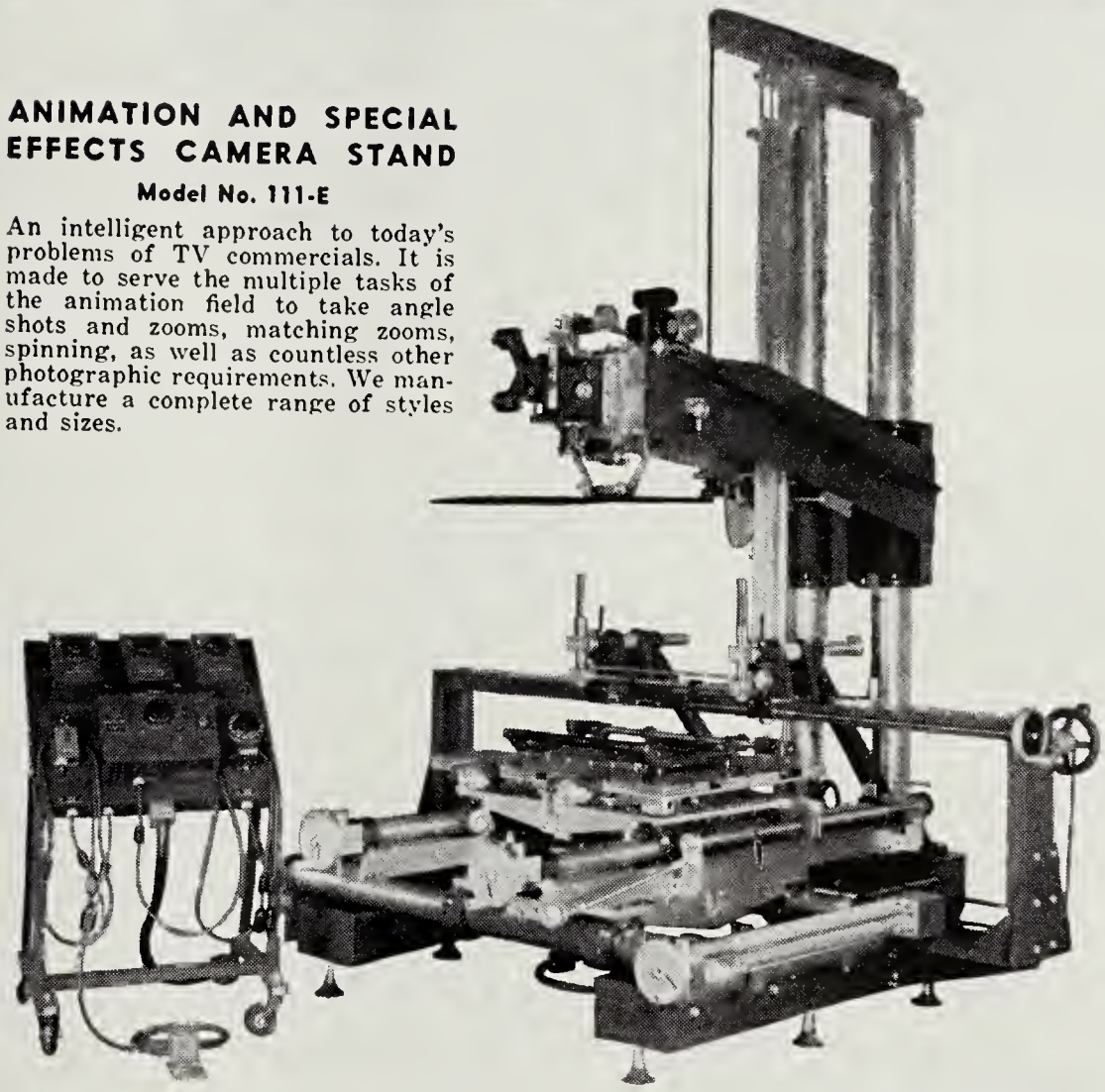
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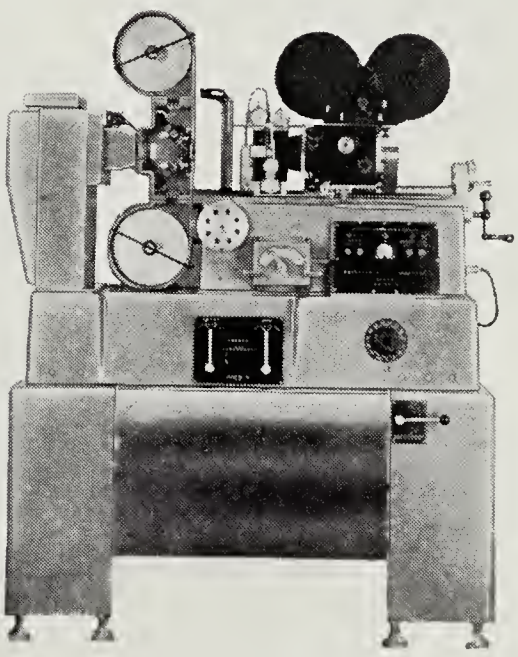
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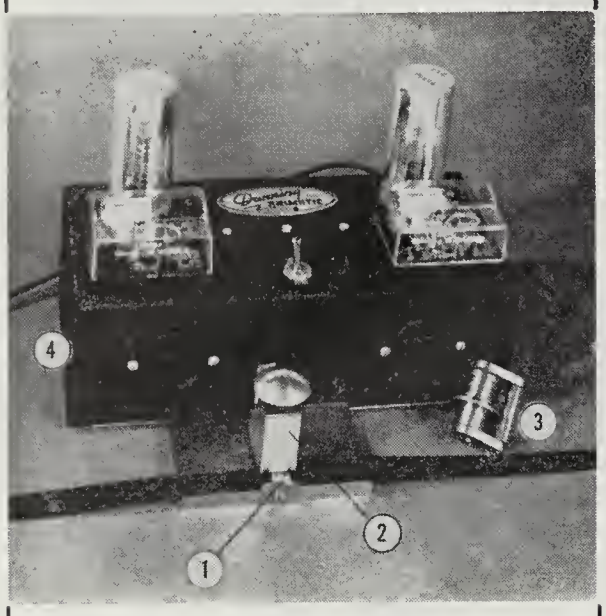
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or in television and we must wait the completion of their outside assignments in order to make the necessary tests for their coming commitments at M-G-M.

A given test shot may run any length, and depends upon the wishes of the director or perhaps the director of photography. Sometimes we may shoot as many as 60 tests on wardrobes alone, and these invariably require the use of both cameras in order to record for the screen the proper perspective. Very often a dress, gown or costume photographed closeup will look quite different when photographed "full figure" in a medium or long shot.

Needless to say, the time and money spent in pre-production tests actually saves considerable time and money later, once we start shooting the production proper. When testing has been adequately and carefully done—and evaluated—there are rarely any costly interruptions for changing makeup, hair styles and costumes after the first day's rushes are screened. All this has been settled once and for all, with the approval of all concerned. And only in very rare cases, and often after considerable deliberation, are any deviations made from the "norms" established by pre-production tests.

TOO AMBITIOUS FOR 8MM

(Continued from Page 36)

matic use of illumination, also a subject that could project powerfully as a silent vehicle without the intrusion of subtitles. Sal selected the universally known story of Christ's nativity. This was filmed in its entirety in our subbasement with sets and costumes that we designed and executed, and with a cast selected from among friends and family. Sincerity, dignity and simplicity with a strong accent on mood were the concepts upon which we based our effort. Make-up, costuming and illumination were the tools we employed. The film was set to simple Christmas music and was ready for showing during the holiday season. It was not until the following January that we discovered and joined a movie club and began seeing the work of other amateurs. Only then did we discover that we had attempted and achieved something unique and regarded as very difficult to bring off. Since then "The Nativity" has won honors in four international amateur film competitions.

Realizing that our goals were far too ambitious for 8mm, in the spring of 1953 we purchased a 16mm Bolex and had it equipped with a Pellegrini variable shutter. This was an essential accessory, for all our speical effects are created in the camera on the original. It was then that we selected for our second venture "The Fall of the House of Usher." The mood qualities and dramatic content of the story rendered it so irresistible to us that the enormous difficulties inherent in the vehicle from the amateur production standpoint became a challenge rather than a deterrent. Together we read and analyzed the story until we were in complete accord on its character and psychological implications, as well as upon the manner of interpretation. This method of working was followed throughout the entire scripting operation. Sal did the actual scripting, but it was the product of our unified thinking. He feels that the translation of this tale into a shooting script was the most monumental task of the entire endeavor.

When the script was complete I wrote the narrative, retaining much of Poe's language, and keying all additional narrative to his very individual style. The result was a unified narrative that carries the mood of the piece audibly while the film unfolds it visually. The narration is in the first person spoken by the friend; but the voice is that of Sal Pizzo. In this picture the speaking of the narrative becomes a dramatic performance.

Sal portrayed the difficult role of Usher. For the other roles we selected three friends from our movie club who had dramatic potentialities and the desired outward characteristics for their roles. Harry Ruffner had the physical attributes suitable to the strange and rather sinister butler. Rose Pellegrini, with her enormous dark eyes and long dark hair, was cast as Usher's tragic twin sister. Tullio Pellegrini had the physical appearance essential for a dramatic contrast with Usher, plus the expressiveness of countenance and quick intelligence which we knew to be essential for this sustained and exacting role. None of these people had had any dramatic experience. Under Sal's direction they turned in sincere and sensitive performances. The professional quality of the performances is due to the fact that people with good potentialities were directed to underplay their roles, and to react rather than to act.

The principle settings were in our home. With borrowed pieces of antique furnishings and the use of drapery and home-made flats we transformed a modern living and dining room into interiors suitable to the period and character of our vehicle. Again our subbasement became a setting, this time for the dungeon burial chamber. The wide-angle lens, the dark draperies and the low-key lighting created the illusion of space which we did not have.

As I shall explain in my article next month, illumination was a paramount concern. The costumes were designed and executed by myself. Ingenuity be-

comes the amateur costumer's substitute for money. We have all had much amusement out of Tullio's handsome cut-away coat that was fashioned from a friend's ample maternity coat. The model of the Usher mansion was built by Sal from my designs. About 3 feet in height, it was set in its surrounding landscape in the sub-basement area previously occupied by the dungeon set. In our version of the story the Usher mansion is destroyed in the end by fire, and during the hectic burning sequence the Pizzo house very nearly went up in smoke with it.

After months of attentive listening, we came upon the Shostakovitch 5th Symphony which we edited and arranged on tape for our musical score. After the film was completely edited we had it sound striped. The music was wired from the tape recorder into the Bell & Howell "202" magnetic-recording projector, and narrative was spoken through a microphone.

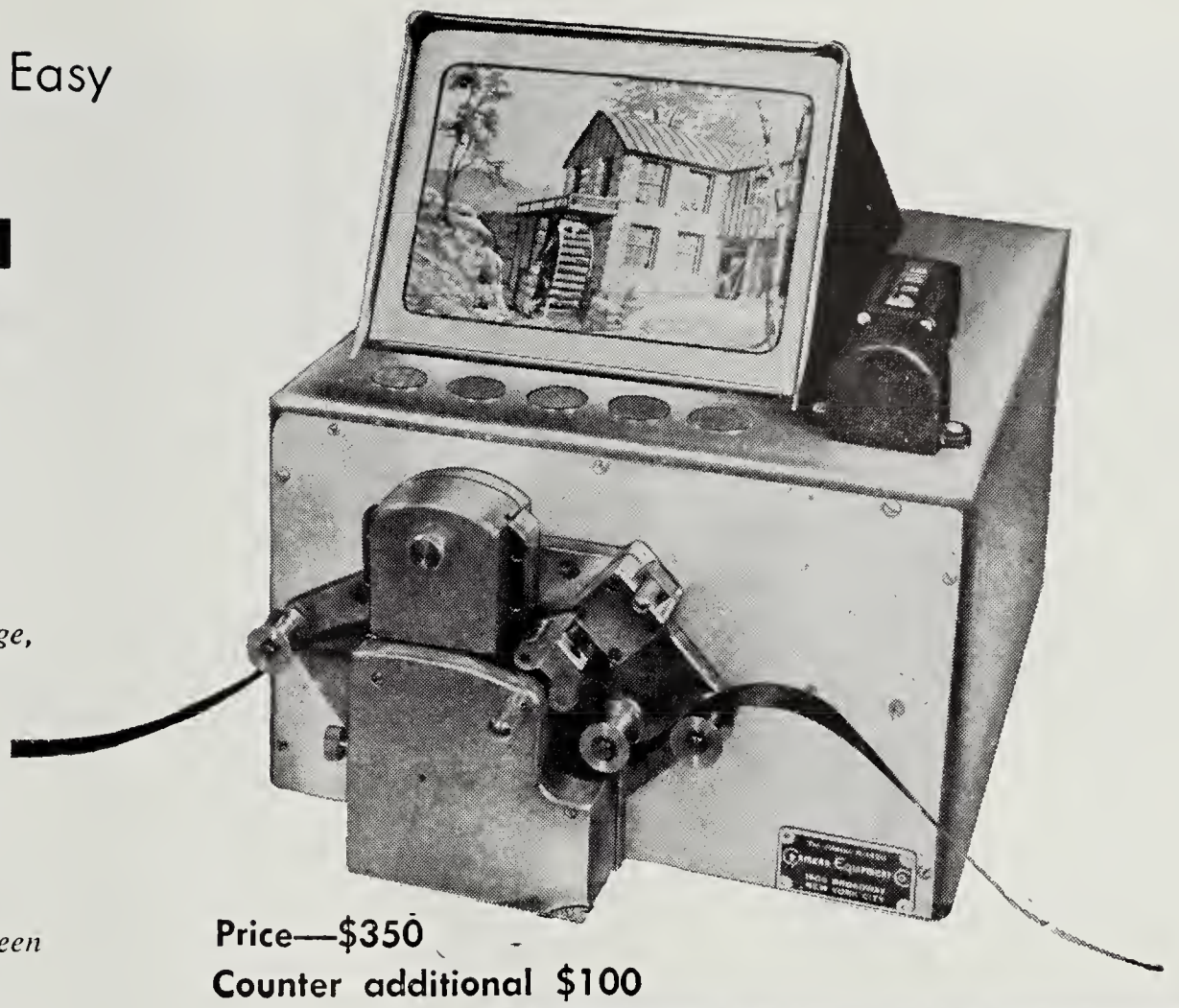
Sal is the editor on our production team and finds this phase one of the most creative and satisfying of all the production activities. He has done much in the Westwood Movie Club to raise editing standards, to make the better filmers aware of matching action techniques, and to assist them in tight, concise editing of their films.

"The Fall of the House of Usher" is 28 minutes in length. The scripting was

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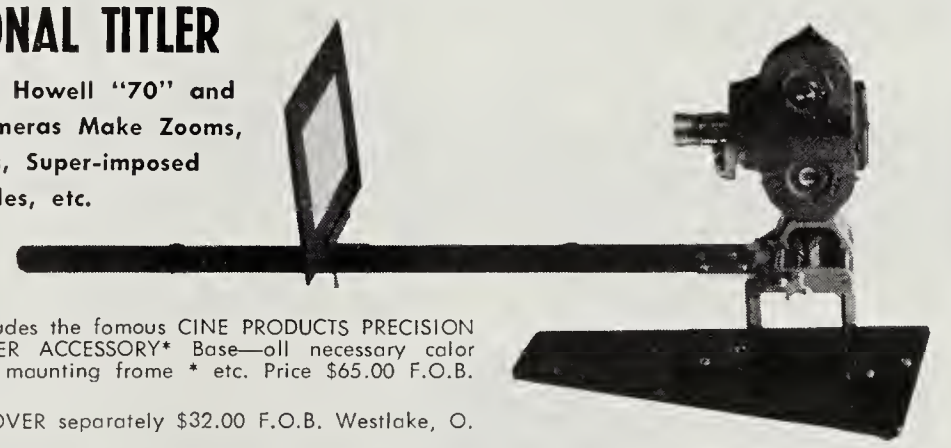


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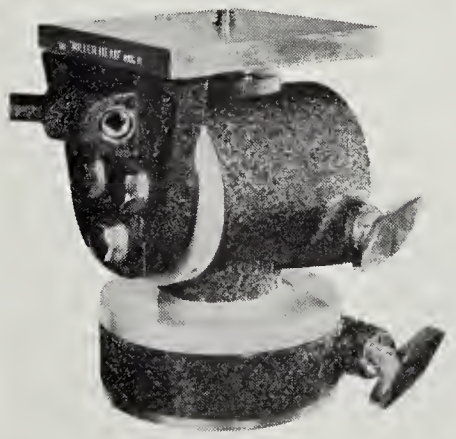


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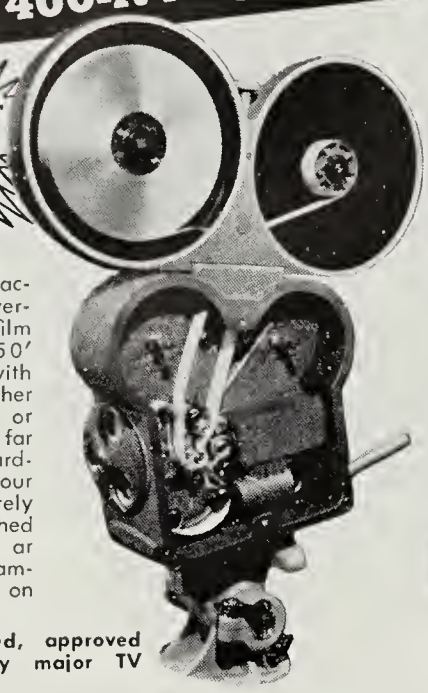
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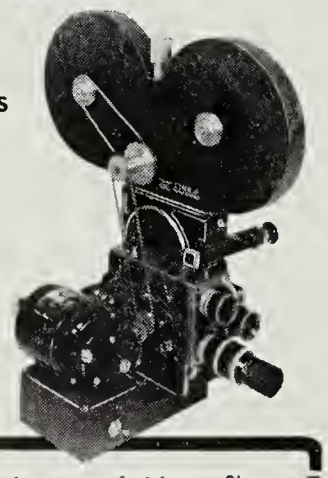
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begun in June of 1953. The film was completed with its sound track in July of 1954. Working in one's spare time with every detail of setting, costuming. etc., to be done by the producers before the camera can grind is a slow procedure. The longer sequences were filmed over week-ends, these sessions never breaking up before 3 or 4 o'clock in the morning.

In our first film, "The Nativity," we had an extremely sympathetic subject. When we chose "Usher" as our next vehicle, we were fully aware of the unsympathetic nature of our story. We did, however, through our own understanding of the central character, Usher, endeavore to portray him not as a melodramatic monster, but as a strange and haunted human being caught in the tragic web of heredity and environment. This interpretation does get through to the audience. Although the film was made with a more discerning group in mind, we have discovered in several large showings that it has enough ingredients at the various levels to grip and move any audience. Its reception has richly justified our belief in the principles of sound theater. People shudder at the mention of Poe, and certainly the larger segment of any audience would prefer not to be shown the morbid depths of life. We have given them Poe and led them to share his dark and haunted world. We have had, therefore, the wonderfully gratifying experience of putting something of ourselves into a work and seeing it come out powerfully in the finished product, the doubly-rich experience of creating and of communicating.

AIDS TO 16MM CAMERAMAN

(Continued from Page 30)

sequence was a shot looking into a home lit with warm-colored light, while the foreground prop representing the side of a cabin or a contemporary home was lit with blue-filtered lamps.

Spotlights are preferred to floods for this work because the light may be controlled and masked off more precisely. It's even convenient to have the white light coming from spots, too, so it may be kept from washing out the color effects.

Occasionally useful is the device of "pinpointing" into the scene a few color highlights. Here the scene is lit with unfiltered lamps plus a few small spots with deep-colored gels over them. Glassware, white-enameled items, and electronic assemblies are among the subjects benefitting from this treatment.

Cinerama, with its audience-participation effect, has influenced more than the technical side of movie making. Travelling shots appear in 16mm films rather frequently these days, taking viewers along for all kinds of rides. Seldom does an airplane film omit flight scenes, unless it's strictly a technical job. Railroad pictures present scenes taken from the locomotive of the track ahead, even if the paying passengers never get such a view.

Factory pictures are enlivened with shots taken with the camera traveling along assembly lines, while a mining film generally tempts the photographer into setting his camera on the front of a mine locomotive. Film sponsors realize that these shots are more than good entertainment—key information is often given by the narrator during such sequences. Facts that might ordinarily be difficult to fit in with other shots may be presented during the traveling sequence.

One industrial photographer showed real ingenuity in devising traveling shots for a lumber picture. For the sawmill sequence, the Cine-Special was mounted on a giant log for a close vantage of the bandsaw at work. The photographer already owned a small wooden platform, about 12″x18″, that he had previously made for such shots. On it was fastened a hi-hat camera mount, which takes a regular pan head from the tripod. Simply nailing the platform to the log, a proper distance from the sawblade, gave the desired view. For mounting the unit horizontally on walls, two 2x4's cut at a 45° angle at both ends for props are carried.

To protect the camera as the log was whipped back and forth near the blade, the log carriage operated at 1/3 normal speed and the camera turned over at only 8 frames per second.

Raw lumber in the form of boards leaves another part of the mill on a chain drive, and the cameraman there obtained permission to set a triangle and tripod on the moving line. The resulting shot, along with on-the-scene sound effects, gave an excellent climax to an already impressive sequence.

Automobiles offer many advantages for traveling shots. A photographer for a church film set his camera on the back of a station wagon for getting pictorial views as the car moved. A series of dissolves built an interesting moving sequence to allow the narrator to interrupt the dramatic action.

Forward views of moving scenery can be accomplished by mounting the camera platform securely on the fender or hood of a car. Lowering the tire pressure slightly will give a cushioned ride and result in a smoother picture.

Scenes taken through the windshield have been made easier with a device called the Autopod, selling for $57.50.



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However, home-built rigs also do very well, and can be designed to use Quick-Set or other tripod heads. I have seen travel pictures taken through the windshield, where otherwise the subjects might have objected to being photographed. Mountain roads look especially good in this type of scene.

Two techniques that might be discussed together are limited animation and stills in movie filming. They aid in getting more results from each filming dollar spent—an important matter to 16mm producers.

"Limited animation" covers a variety of devices to escape the expensive process of drawing a new cell for each frame of the picture in normal animated work. Most of these methods originated with the big TV commercial film producing organizations, were then adopted by the smaller producers for local and regional clients. Having studied the possibilities, many companies lacking an animation artist are able to produce on order acceptable animated commercials and sequences for instructional films.

Animating a figure or object by moving a cutout of it over a background between each frame has served for countless pictures. On a national basis, the method is seen in wine commercials produced in San Francisco. Bottles of wine, trademarks, slogans, and cartoon vintners and customers whisk about the

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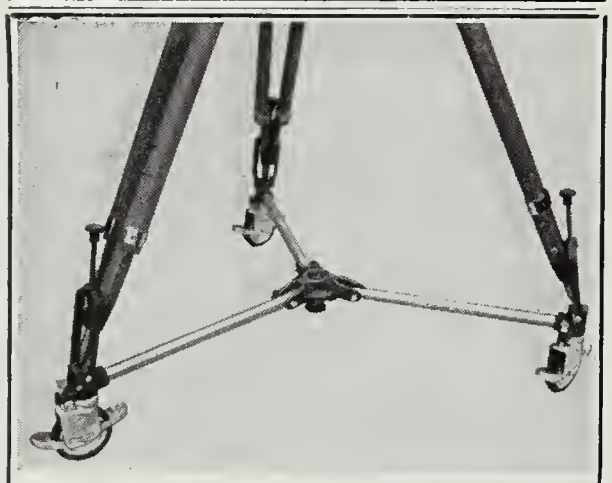
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screen for 20 seconds or a minute.

For local clients, cost-cutting producers have adapted the same techniques with excellent results. Frequently the film maker is even spared the necessity of supplying art work. Advertising agency artists may draw the cartoon figures, letter the necessary slogans, and furnish background scenes. The cameraman discovers he's an animator after shifting the figures for his single-frame exposures. Very-low-budget assignments often dispense with the ad agency, and the filming group calls upon a freelance artist.

Another effective animation device is to use jointed cut-out figures. Care is needed to keep the action from looking amateurish. One national advertiser, a clock manufacturer, has a new series of commercials scheduled with "2½-dimensional" paper figures that may be moved. It is a good bet that similar films will appear for local sponsors.

Large and small producers alike make frequent use of pop-ups. Here, the camera is stopped and an item placed in the scene before it is started again. Any number of pop-ups may appear in a few seconds. No new device, the trick was seen in films made around the turn of the century.

Still photos play a part in economy TV commercial filming. If several good stills are on hand, a location trip can often be avoided. Movement is supplied by animating trade names and advertising slogans over the photos and by zooming the camera in and out. Good 20-second commercials for used car dealers, department stores, dry cleaners, and restaurants have been produced this way.

When the budget is limited, the resourceful and imaginative industrial or TV film cameraman familiar with the latest corner-cutting techniques can deliver a job that is the equal of any put out by the well-equipped studio.

PREPARING THE SCRIPT

(Continued from Page 34)

are serious faults that slow a film down and defeat its purpose.

Most audiences expect ideas to be presented with variety and force. It is not enough, therefore, merely to place the facts upon the screen. The approach must stimulate imagination with a variety of treatment, and at the same time forcefully present the subject matter.

Audiences have a natural curiosity regarding the locale and the characters portrayed in a film. A well-written script, therefore, will satisfy this curiosity by clearly establishing the locale as well as presenting enough detail to clearly identify each character and make clear his relationship to the story.

Many film-makers, in plotting a script for filming, feel that a script must be full of odd and unique situations. Actually, it is highly improbable that any film situation today is enitrely original. An audience will be more impressed with the freshness of the approach used in presenting a situation.

A good script doesn't "just grow." Rather, it evolves through a series of steps from the original idea to the actual diagram for production which we call the *shooting script.* Perhaps in the simplest form of film making—the home movie—all the steps of production and of script writing are not necessary. But in every other type of picture, whether it be a documentary or a feature, a much better script will follow a definite plan of preparation.

Let us assume that our idea for a film has been established. The next step is to sketch briefly the outline of the story that is to be built around the idea. This is called the *synopsis*, and it may take the form of either a plot outline or a short prose summary of the story. The important thing to remember about the synopsis is that it treats only the basic plot of the film; it does not deal with the cinematic approach or any of the production technicalities. The synopsis is the stage at which the story is organized, or revised until it is correct in terms of what the producer wishes his picture to convey.

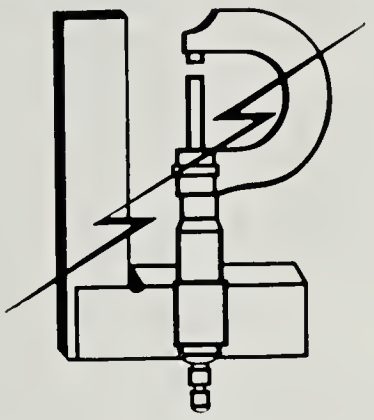
After the synopsis is approved and the story values have been established, the script writer can then take the story and set it down in the broader, more detailed form that we call the *treatment.* This is a more-or-less full exposition of the story, written in narrative form and including essential action and dialogue (in content, if not in final form). In addition, the treatment gives general suggestions as to the cinematic approach to be used in intepreting the various parts of the story. It suggests the scope of the film, the amount of production value involved, and various technical devices that will aid in putting the story across on the screen.

When the treatment is completed, it should be studied by all the technicians who will be involved in producing the film, and who can then get together in story conferences to discuss the film, make any necessary decisions, and decide whether the picture as presented in the treatment can be shot with the facilities available.

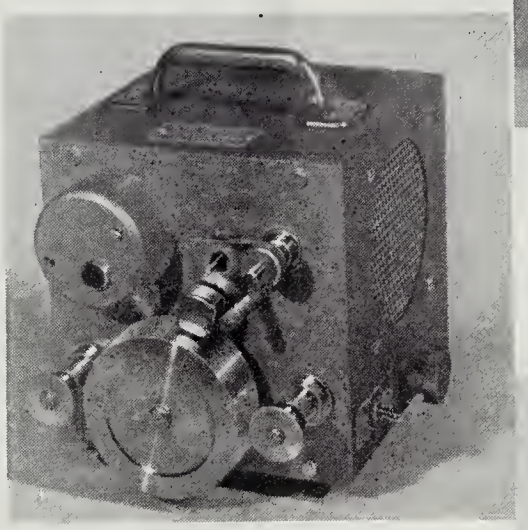
Once approved, the treatment is then broken down, refined, and re-written in *scenario* form. (The scenario is also often called the screenplay, continuity, or shooting script.) The scenario is a

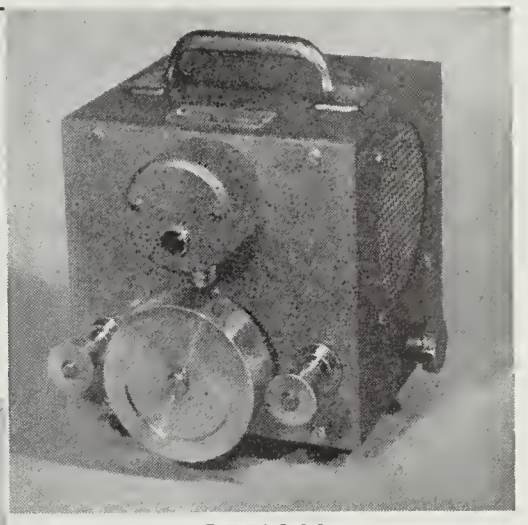
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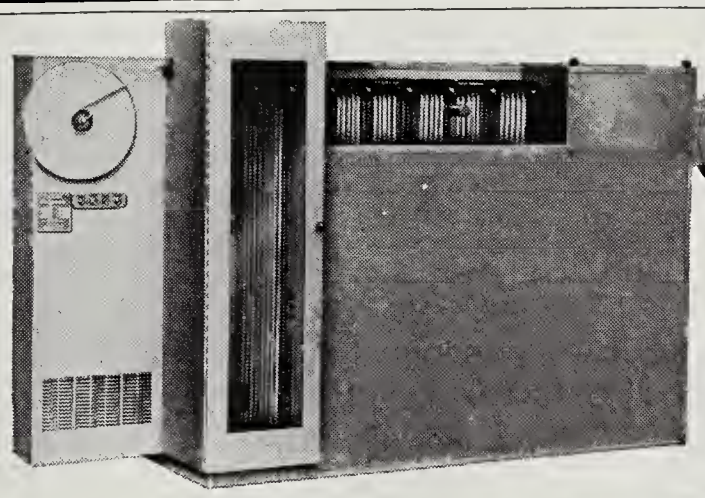
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highly detailed description in technical language of the story scheduled for production. It is an elaborated breakdown of the treatment into actual scenes and sequences, with the action and dialogue clearly stated or defined. It supplies a good deal of information for the production technicians with regard to camera set-ups, locale of scenes, costumes, set decorations, lighting, etc. Moreover, the scenario points up the action, elaborates on the characters, includes little bits of "business," and suggests variations in pace and tempo. In short the scenario is the detailed blueprint of the film to be shot.

One of the most important factors in any scenario is continuity. This is the inter-relation of separate scenes and sequences, blending them together to form a unified cinematic pattern. If a screen story "hangs together" well and proceeds smoothly from one phase to another without abrupt breaks in connection or meaning, we say that it has smooth continuity.

In simpler form, the term means that a good script has a beginning, a middle and an end—each a separate phase of the story but leading logically into the other with a strong sense of connection binding them together. This result can only be achieved by careful pre-planning. The dramatic or story elements



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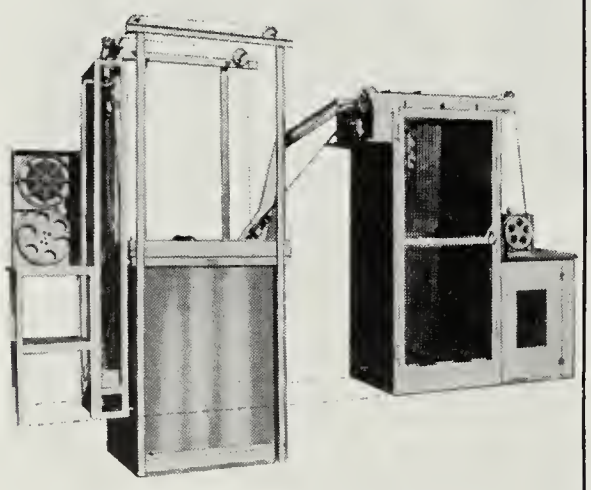
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involved should be organized in a logical pattern so that they tie smoothly together. The script is the place where continuity should originate. Contrary to the belief of some, it cannot be manufactured in the cutting room.

This discussion will be continued next month at which time format of the script will be explained as well as the elements of dramatic construction, the planning of individual scenes and the use of transition devices.

FILMING THE JET CARRIER

(Continued from Page 32)

for those startling shots in "This Is Cinerama," our initial production.

Lowell Thomas and General Meriam C. Cooper had produced that show, and Louis de Rochemont was going to do the second. I was signed to photograph the America scenes. The one I'd like to talk about is the jet plane sequence. For the climax of the film we were to take the audiences in for a landing on a jet carrier.

The Navy let us use the aircraft carrier U.S.S. Lake Champlaine, and we worked off the Florida coast near Jacksonville. Working with me as operative cameraman for the shipboard footage was Jack Priestley. We didn't have any real trouble until the weather turned bad. One thing was keeping the camera going; the other was keeping the jets from flying off for nice weather and leaving us behind.

We shot on the elevator for planes and escalator for pilots and in the briefing room. On deck, we built a platform right off the side of the carrier, with just six inches on the ship itself. We didn't blimp the camera because it would have tipped us over just that much more. The jets over our heads didn't bother us as much as the strong head winds.

For another scene, we wanted to get a view of what it was like as the plane came right at the carrier deck, so we slung the camera on a platform right below the overhanging edge of the rear deck. There wasn't room for anybody to be with the camera in that shot. So we used a device called Regohm for remote control operation of the camera.

For some panoramas of the carrier, I had the camera mounted in the side door of a rescue helicopter. They gave me one of those crash helmets and I wore my old plaid windbreaker. And there I was in Florida. I had a problem with those young Navy "eggbeater" pilots. With Cinerama you've got to make sure you keep your horizon level or you twist the picture out of shape. But I finally got my shot.

We saved the big jet landing for last. We didn't want to lose the camera till we had shot the rest of the show. The boys in the crew affectionately call it "the monster." They say it's worth around $25,000.

Now about the Regohm. No cameraman can squeeze into the nose of a jet. Dick Babish helped work out an arrangement with the Electric Regulator Corporation and Grumman Aircraft to mount the camera in the nose of a Navy Banshee F2H3 Jet. Tests were made in Patuxent, Maryland, with a dummy carrier deck. Then the whole nose equipped with the specially-controlled camera was shipped to Florida and installed on the Banshee.

We spent a couple of weeks more testing the equipment. But when Lt. Comdr. Bud Gear got into the cockpit, it was every man—Gear and the "monster"—for himself.

We just couldn't get the automatic mechanism to work right. Came one Saturday morning and we had exhausted our alloted fuel. We were grounded and we didn't have our shots yet. Comm. Gear was supposed to report back to Maryland. In the afternoon I tried one more series of adjustments. Everyone had broke for the weekend. I got gas for one more trial. It worked.

My job now was to keep Bud Gear around. I billeted him in my hotel for a go on Sunday. It rained all day. I put him up again at my expense on Sunday night. It was a gray Monday morning.

The weather had started to set in on us. Cold fog banks closed in the coast for a hundred miles. We were told that it was probably today or never. It was the climax of "Cinerama Holiday" and the climax of the filming in America.

Visibility was decreasing by the second and we had lost the "Banshee" in the overcast. At least I had. And they told me Comdr. Gear was running low on fuel. But then we saw it coming down towards us. It was a mighty funny sight. In place of the blue nose it usually has, there was this big black box, with the 200-pound camera inside looking out.

It probably wasn't much to those guys who have been bringing in planes in all kinds of weather, but they probably didn't know that this was the first time any sort of camera was being punished by such speed or had been asked to shoot a scene moving at such tremendous speed. Our trouble was caused by the great pressure in the front of the nose binding the shutter. We kept blowing fuses.

Back to the plane. Only one landing gear clicked down. But Gear had to pick up his nose and circle for another pass. I could see us fishing the camera out of the sea. But both wheels came down this

time. We didn't know whether the camera would go shooting out of its mount. The Banshee was stopping dead from 125 knots. And before I knew it, the tail hook had caught one of the cables.

A couple of weeks later I was sitting in a theatre right in Bud Gear's seat, making that landing myself. Soon after that I was off again with Mantz and the boys to start filming the next Cinerama production, "Seven Wonders of the World" for Lowell Thomas. I think it's going to be the greatest show that has ever been filmed, and I'm going to tell you more about it in a few months.

FILMING THE SKI BALLET

(Continued from Page 33)

The beginning of the ski ballet was planned for a Saturday, and the day before we set about to mount our camera on skis. First we welded together two large sleds as a base. The major problem was finding a way to mount the 200-pound camera so that it would simulate the effect of a skier's actual body movements and shifts of equilibrium.

This was taken care of by erecting a frame of steel bars as support and protection for the camera. The camera was suspended from a rod from the top-center of the rig. The important thing was not to mount it rigidly, but let its weight shift as the human body shifts on the ski slope.

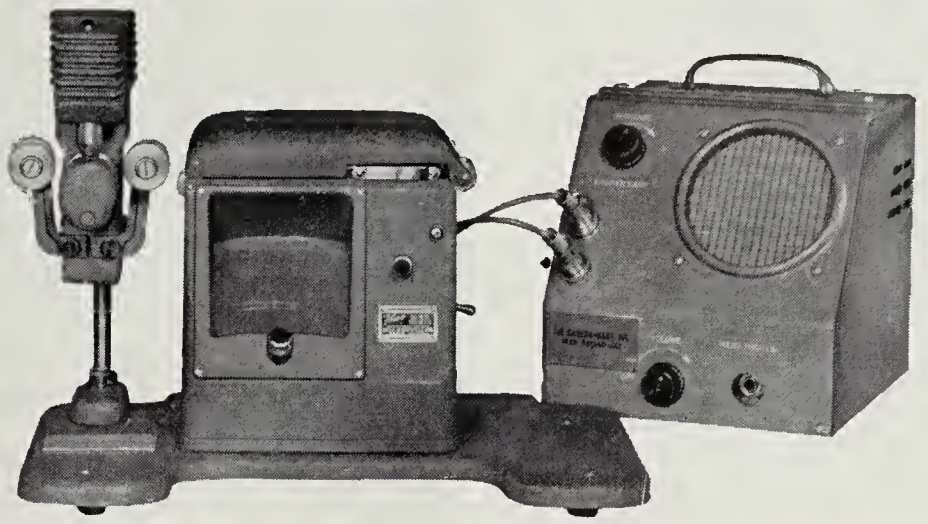
On Saturday morning we started off with the most spectacular shot that was planned. Ten skiers went down the slope ahead of the camera. Gayne Rescher was seated behind the camera, watching over it on sharp swings and turns. Two top-notch skiers guided the rig down the slope. Over forty skiers were then to pass the camera, disappearing in a swirl of snow. At first we had trouble merely getting the monster to move, and we had to turn the sled over and wax the bottom. Now, it gradually began picking up speed. The skiers behind us could not catch up. Soon we passed the skiers who had started out ahead of us, and on we went, the men guiding the sled hanging on for dear life. Finally we hit a patch of soft snow, and stop

(Continued on Page 55)

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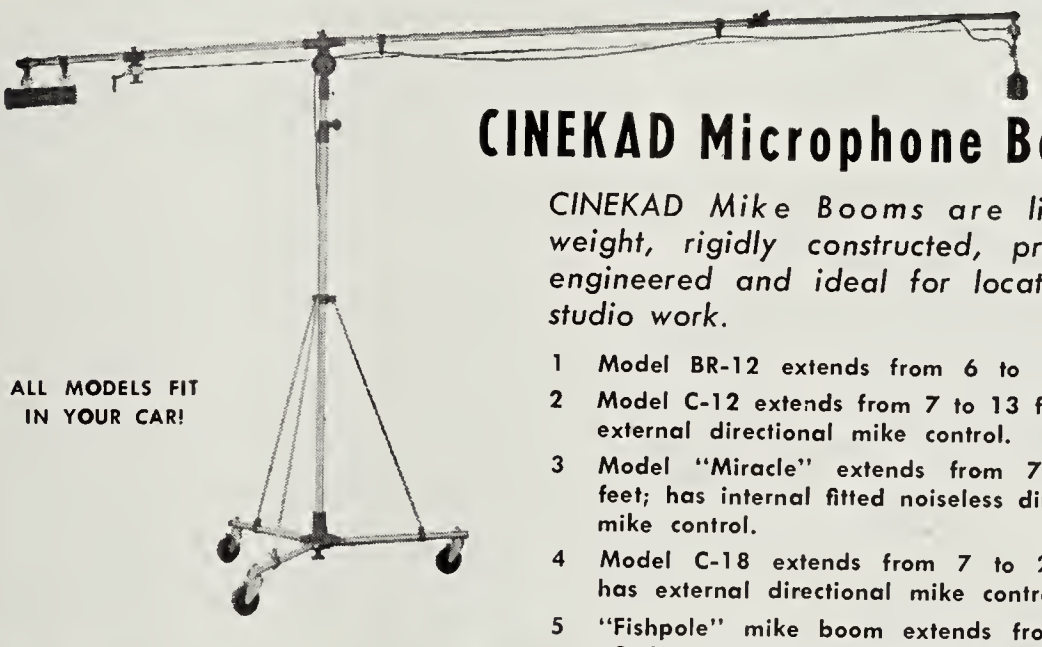
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Feature and television film productions for which members of the American Society of Cinematographers were engaged as Directors of Photography during the past month.

AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 8, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes non-resident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

•

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ALLIED ARTISTS

• ELLSWORTH FREDERICKS, "The Friendly Persuasion," (Color; wide-screen) with Gary Cooper, Dorothy McGuire. William Wyler, producer-director.

• WILFRID CLINE, "Mother-Sir!" with Joan Bennett, Gary Merrill and Shirley Yamaguchi. Edward Bernds, director.

• HARRY NEUMANN, "Crashing Las Vegas," with Leo Gorcey, Huntz Hall, Mary Castle. Jean Yarborough, director.

• CHARLES VAN ENGER, "Magnificent Roughnecks," with Jack Carson, Mickey Rooney, Nancy Gates, Jeff Donnell. Sherman Rose, director.

COLUMBIA

• CHARLES LANG, "Solid Gold Cadillac," with Judy Holliday, Paul Dauglas, Fred Clark. Richard Quine, director.

• BURNETT GUFFEY, "The Harder They Fall," with Humphrey Bogart, Rod Steiger, Carlos Montalban. Mary Robson, director.

• CHARLES LAWTON, "It Happened One Night," with June Allyson, Jack Lemmon, Charles Bickford. Dick Powell, producer-director.

• HENRY FREULICH, "He died Laughing," with Frankie Laine, Lucy Marlow. Blake Edwards, director.

METRO-GOLDWYN-MAYER

• RUSSELL HARLAN, "Lust For Life," (Ansco Color; CinemaScope) with Kirk Douglas, Anthony Quinn. Vincente Minelli, director.

• ROBERT SURTEES, "The Swan," (Eastman Color; CinemaScope) with Grace Kelly and Alec Guiness. Charles Vidor, director.

• PAUL VOGEL, "The Rack," with Paul Newman, Walter Pidgeon, Wendell Corey. Arnold Laven, director.

• JOHN ALTON, "The Catered Affair," with Bette Davis, Ernest Borgnine, Debbie Reynolds. Richard Brooks, director.

PARAMOUNT

• LOYAL GRIGGS, WALLACE KELLEY, PEVERELL MARLEY, "The Ten Commandments," (Technicolor; VistaVision) with Charlton Heston, Anne Baxter, Yul Brynner, Edward G. Robinson and others. Cecil B. DeMille, producer-director.

• DANIEL FAPP, "Pardners," (Technicolor; VistaVision) with Dean Martin, Jerry Lewis, Lori Nelson. Norman Taurog, director.

REPUBLIC

• ERNEST HALLER, "Dakota Incident," (Trucolor) with Linda Darnell, Dale Robertson, John Lund, Ward Bond. Lew Foster, director.

20TH CENTURY-FOX

• LEON SHAMROY, "The King and I," (Color; CinemaScope) with Deborah Kerr, Yul Brynner, Rita Moreno. Walter Lang, director.

• LEO TOVER, "The Revolt of Mamie Stover," (Color; CinemaScope) with Jane Russell, Richard Egan, Agnes Moorhead, Joan Leslie. Raoul Walsh, director.

• MILTON KRASNER, "23 Paces to Baker Street," (Color; CinemaScope) with Van Johnson and Vera Miles. Henry Hathaway, director.

• LEE GARMES, "The Sixth of June," with Richard Todd, Edmond O'Brien, Dana Wynter, Robert Taylor. Henry Koster, director.

UNIVERSAL-INTERNATIONAL

• GEORGE ROBINSON, "Toy Tiger," (Technicolor) with Jeff Chandler, Larraine Day, Cecil Kellaway. Jerry Hopper, director.

• HAROLD LIPSTEIN, "Apache Agent," (Technicolor; CinemaScope) with Audie Murphy, Anne Bancroft, Pat Crowley. Jesse Hibbs, director.

• RUSSELL METTY, "Written on the Wind," (Technicolor) with Rock Hudson, Lauren Bacall, Robert Stack. Douglas Sirk, director.

• IRVING GLASSBERG, "Johnny Salvo," with Ray Danton, Leigh Snowden, Grant Williams. Jack Arnold, Director.

• WILLIAM DANIELS, "The Gentle Web," (Technicolor) with Esther Williams, George Nader, Edward Andrews. Harry Keller, director.

WARNER BROTHERS

• ROBERT BURNS, TOM TUTWILER, "The Spirit of St. Louis," with James Stewart. Billy Wilder, director.

• PEVERELL MARLEY, "Serenade," (Warnercolor) with Mario Lanza, Joan Fontaine, Sarita Montiel. Anthony Mann, director.

• JOHN SEITZ, "Santiago," (Warnercolor; wide-screen) with Alan Ladd, Rossana Podesta, Lloyd Nolan. Gordon Douglas, director.

• BORIS KAUFMAN, "Baby Doll," (Widescreen) with Karl Malden, Carroll Baker, Eli Wallach. Elia Kazan, producer-director.

• CARL GUTHRIE,"Cheyenne" (TV) with Clint Walker, L. Q. Jones. Richard Bare, director.

• CARL GUTHRIE, "Kings Row" (TV) with Jack Kelly, Robert Horton, Nan Leslie, Victor Jory. Paul Stewart, director.

• HAROLD STINE, "Casablanca," (TV) with Chas. McGraw, Marcel Dalio. John Peyser, director.

• CARL GUTHRIE, "Siege," (TV) with Elizabeth Montgomery and Ed Kemmer. Paul Stewart, director.

INDEPENDENT AND TV FILMS

• CHARLES BOYLE, "The Great Locomotive Chase," (Disney; Technicolor; CinemaScope) with Fess Parker, Jeff Hunter. Francis D. Lyon, director.

• WILLIAM MELLOR, "Johnny Concho," (Kent Prod.) with Frank Sinatra, Phyllis Kirk, Keenan Wynn. Don McGuire, director.

• JOSEPH LA SHELLE, "Run For The Sun," (Russ-Field Corp.) (Superscope) with Richard Widmark, Trevor Howard, Jane Greer. Ray Boulting, director.

• ERNEST LASZLO, "Bandido," (Prods.; Color.; CinemaScope) with Robert Mitchum, Ursula Theiss, Gilbert Roland. Richard Fleischer, director.

• WALTER STRENGE, "Hit and Run," (Hugo Haas Prod.) with Cleo Moore, Hugo Haas. Hugo Haas, producer-director.

• FLOYD CROSBY, "TV Reader Digest," (Alpha TV).

• ALLAN STENSVOLD, "Dr. Hudson's Secret Journal," (Author Playhouse).

• KARL FREUND, "I Love Lucy," "December Bride," "Our Miss Brooks," (Desilu Prods.).

• NICK MUSURACA, "The Lineup," (Desilu).

• SID HICKOX, "My Favorite Husband," (Desilu).

• WILLIAM WHITLEY, "Crossroads," (Federal TV).

• VIRGIL MILLER, "You Bet Your Life," (Filmcraft Prods.).

• JOE NOVAK, "Brave Eagle," (Frontier Prods.).

• LESTER WHITE, "Navy Log," (Gallu Prods.).

• DANIEL B. CLARK, "People Are Funny," "Do You Trust Your Wife?" (Don Fedderson Prod.).

• MACK STENGLER, "Liberace," (Guild Films).

- Robert De Grasse, "It's Always Jan," (Jannard Prod.), and "Make Room for Daddy," (Marterto-Desilu).
- Norbert Brodine, "The Loretta Young Show," (Lewislor Films).
- Stuart Thompson, "Lassie," (Robert Maxwell).
- Philip Tannura, "Burns & Allen Show," (McCadden Prods.).
- Harry Wild, "Bob Cummings Show," Laurmas-McCadden).
- James VanTrees, "The People's Choice," (Norden Prods.).
- William A. Sickner, "Medic," (Medic TV Prods.).
- George Clemens, "Schlitz Playhouse of Stars," (Meridian Prods.).
- Harold Marzorati, "MGM Parade," (M-G-M Studio).
- Henry Sharp, "Sheena, Queen of the Jungle," (Nassour Studios).
- Jack MacKenzie, "Frontier," (Outpost Prods.).
- Lucien Andriot, "It's A Great Life," (Raydic Corp.) and "The Life of Riley," (Hal Roach).
- Lothrop Worth, "The Great Gildersleeve," (Hal Roach).
- Gilbert Warrenton, "Sergeant Preston of the Yukon," (Chas. E. Skinner Prods.).
- Charles Van Enger, "Big Town," (Mark Stevens TV).
- Harold Wellman, "Wyatt Earp," (616-Desilu).
- Karl Struss, "My Friend Flicka," (TCF TV Prods.).
- Kenneth Peach, "Fury," (TV Programs of Amer.).
- Guy Roe, "Gangbusters," (Visual Drama, Inc.).

FILMING THE SKI BALLET

(Continued from Page 53)

we did, spraying all bodies in different directions. Gayne was thrown clear in the soft snow, the skiers likewise, and the rig bounced several times over. When Gayne reached the camera it was stuffed with snow.

When all the skiers had caught up, we dragged it back up the slope and welded on the biggest, strongest, toughest brake we could find. It was a detail we had forgotten. That was only the start.

Only three members of the Cinerama crew knew how to ski, Gayne, Louis de Rochemont's son, Louis III, and Bob Bendick. The rest were mobilized on a strange assortment of velos, unique cycle-like devices mounted on short skis fore and aft, and on skis and snowshoes. There was no difficulty when it came to the photography, but rather when it came for the crew to follow the camera down the slope after the scene had been photographed. What followed in short order was a succession of injuries that practically caused Mr. de Rochemont to abandon the sequence on the third day out.

After the initial set-up, Louis de Rochemont III, who was skiing with the camera sled, waited until the location had been cleared, then started downhill at top speed. He, too, hit soft snow, unpacked by the trail skis. Grip Mike Mahoney spotted the spill and in short order had a rescue sled on the scene. Louis was in a cast for the rest of the picture.

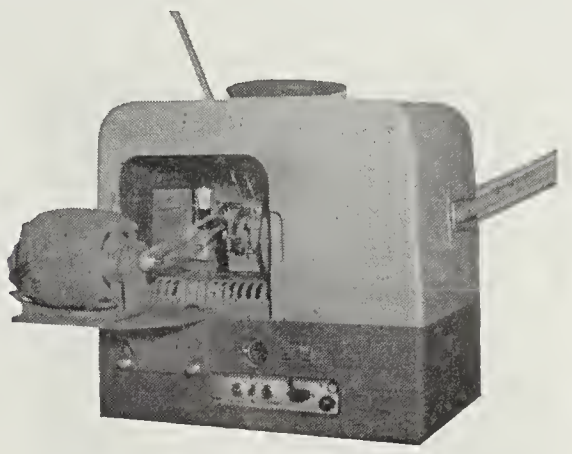
Joe was the next victim. He was skimming down a hillside on a velo, which is much more dangerous than putting on skis for the first time, and was thrown off. He suffered some minor cracked ribs and was laced into a corset-type contraption by a Parsenn doctor. This was the time of discouragement, and shooting was continued on condition that the crewmen ride only on the equipment sleds or stand on snow shoes. But one crew member let his boot laces tangle under the sled and received a badly twisted knee.

All the hardships, however, scarcely dampened our spirit. We all realized we were doing something wonderful and unique. All the hardship and danger was not completely lost on our future audience. Though in one scene skiers were to come at the camera through clouds of mist that had materialized on a locale. Max Bertsch's sister, Margarete, enacted her part with such spirit, trying to raise a cloud of snow before the three-lensed camera, that she struck the camera sled and was thrown on her hip. This shot can be seen in "Cinerama Holiday."

We have been asked how the camera operated in such cold and at such high altitude. Actually, in all our experience with Cinerama it never operated better. Perhaps that is because we took so many extra percautions. Ordinarily we use a regular 30-volt set-up. Instead, we took three 12-volt truck batteries, and removed two volts from each. They were what made the sled so heavy, giving us such outstanding speed. We never undercranked, even for the bobsled ride. We didn't even have trouble with the film snapping in the cold; and remember, we had three times the worries, with three magazines feeding simultaneously.

Photographing the bobsled run is another story in itself. Before we would undertake filming the run, we sent back to the States for the old Number One camera that was used to film "This Is Cinerama." We couldn't afford to lose our new camera because we were expected to go on from Switzerland to capture scenes of Paris in the spring-time.

(Continued on Page 58)



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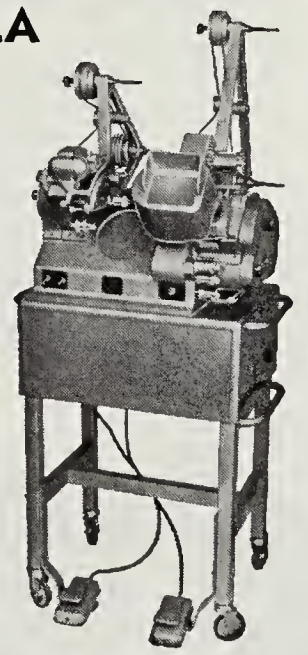
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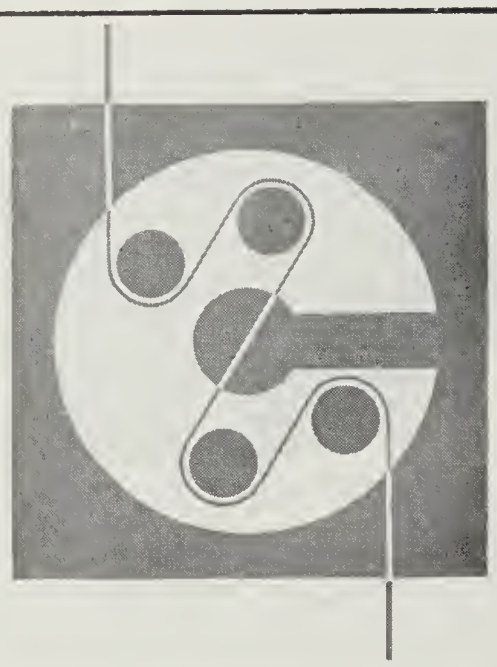
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INDUSTRY NEWS

Technicolor Motion Picture Corporation has announced that due to increased labor costs, it is increasing its prices for 16mm and 35mm dye transfer release prints ¼c per foot.

Simultaneously, the company announced a reduction in the price of 35mm dye transfer answer prints from 97c to 65c per foot. Price changes apply to all products furnished from the Hollywood plant of Technicolor.

Dr. Herbert T. Kalmus, president of the company, also has announced a general policy of not requiring advance payments for release print orders placed on or after March 1, 1956 for manufacture at the Hollywood plant.

• • •

The most important milestone in the 19 year history of Camera Equipment Company, New York, is scheduled to take place early next month when the company's component branches will be consolidated under one roof at 315 West 43rd Street, New York.

The event marks a unique record of success. Starting at 1600 Broadway, present headquarters, the organization consisted of Frank C. Zucker, Margaret Zucker, Eugene H. Levy, and Charles Theurer who is now superintendent of the repair department and machine shops.

Advent of World War II brought rapid increase in the company's business and additional space was taken on the third floor at 1600 Broadway. Little by little the company acquired additional space in neighborhood buildings —at 253 West 64th St., 304 West 54th St., etc.

The consolidation of all operations at 315 West 43rd St., in the heart of Manhattan's famed "film district," will bring about a more cohesive and efficient operation. Entrance will be on the ground floor, eliminating the delay and dependence of elevator service.

• • •

Development of a revolutionary new dubbing cue prompter that materially reduces recording time by eliminating mis-cues, is announced by Telefilm, Inc., Hollywood. Company reports prompter not only efficiently cues all channels needed in a recording session, but it can also be used as a voice cue track for animated scenes or any other recording where workprint for screening is not available.

The prompter employs a regular projection footage counter in a new application that not only provides for the narrator but cues all sound channels for dissolves, fades, and level settings. It has a projector drive mechanism that maintains absolute sync, both forward and reverse, with the dubbing system through a Selsyn interlock.

In operation, the Prompter uses a 25-foot cue strip that can be marked prior to the recording session. The markings are removable, which not only provides for last-minute corrections but allows the strip to be cleaned and reused. During the dubbing session, the marks are projected onto a highly illuminated screen located next to the workprint screen. Lateral divisions provide for all sound channels and the width of the screen permits ample warning of the cue marks coming up to the reference mark.

The system was conceived and developed by Don Harrold, chief sound engineer of Telefilm, according to Joseph A. Thomas, president.

• • •

High-speed movies are finding increasing applications in science and industry, according to George T. Eaton of Kodak Research Laboratories. Some of its uses are measurement of mechanical and electrical effects, determination of velocities, study of welding arcs, and analysis of fundamental chemical processes. They are also proving useful in study of combustion processes and explosive reactions, including guided missile, rocket, and atomic bomb research.

According to Eaton, camera units having film wrapped on a revolving drum, or based on a rotating mirror principle, utilize high-intensity, short-duration exposure to reach "almost fantastic" recording speeds. Other cameras, having conventional film sprocket drive, are capable of speeds up to about 10,000 frames per second.

One superfast camera, the Hycon Submicrosecond, has an exposure time of one ten-millionth of one second. It is used to study particle motion in blast furnaces and jet engine combustion.

Data recording includes numerous uses of both conventional and special camera equipment to obtain photographs for records of construction progress, experimental apparatus, equipment development, and time and motion studies.

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(Continued on Next Page)

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(Continued from Preceding Page)

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FILMING THE SKI BALLET

(Continued from Page 55)

The tremendous vibration of the racing bobsled caused the film to buckle over half-a-dozen times, but finally a St. Moritz greengrocer named Nino Bibbia caught the Cresta run whole for us.

Gayne was probably the only person who came out the "winter wonderland" without a scratch, although he was probably most vulnerable of all, seated on the camera sled. He attributes his good fortune to the fact that he never permitted himself to be tied to the sled, allowing himself to be gracefully tossed clear into the snow. This part of Cinerama's adventures in Switzerland can best be characterized by the comment of a busy Davos bone-setter, "What are you people doing, making a film or having a war?" And it is said that the insurance company cancelled our policy.

But the satisfaction we enjoyed at the end of the Swiss shooting, and again in the Cinerama theatre, was worth it all.

CURRENT COLOR TECHNIQUES

(Continued from Page 27)

After printing, the matrix is developed and etched to produce a colorless gelatin relief image — the positive of the negative from which is was printed. A matrix is prepared for each color aspect of the scene.

While the matrices are being made, a special dye-receptive blank film is prepared. If the customer wants prints with optical sound tracks, the silver sound record is incorporated in the blank film at this stage; if the customer's prints are to carry magnetic sound tracks, the silver sound record is omitted and the magnetic tracks are applied after the dye transfer.

The matrix film carrying the blue aspect of the scene passes through a yellow dye solution. It absorbs the yellow dye, and is then brought into contact with the blank film on a dye transfer machine.

While the two films are traveling in contact, the yellow dye from the matrix is transferred to the blank film. At the end of the dye transfer machine the first matrix is removed.

The blank is now brought into contact with the second matrix, which corresponds to the red light in the scene. The second matrix has been traveling through a cyan (blue-green) dye solution, and the dye is transferred to the blank which is carrying the yellow image.

After the blank has imbibed cyan and the second matrix has been removed, it is brought into contact with the third matrix, which corresponds to the green light in the scene and has been immersed in magenta dye. Finally, the third matrix and blank are separated.

The blank film is no longer blank; it now has all the colors necessary for excellent reproduction of a color scene and is ready for delivery to exhibitors for projection. Where yellow dye is present, blue light is subtracted from the projector's white light source; similarly red is subtracted where cyan is present and green where magenta occurs. Absence of all dyes results in white light on the screen and presence of all dyes in sufficient quantities creates an absence of light, or black on the screen.

Wet matrix and blank emulsions have a consistency approximating wet chewing gum, but all dyes have been transferred in super-imposed registration within tolerances of ten-thousandths of an inch.

Only Technicolor offers the producer the alternative of having film printed on color positive stock or by the dye transfer method. Dye transfer release prints offer a cost advantage when a large number of prints are required for worldwide release. And by dye transfer printing from matrices valuable negative is saved from constant re-use.

Color positive release prints are manufactured only from color negative. Color positive stock is similar to color negative in that it has three super-imposed emulsion layers. Color positive stock is contact-printed by light coming through the color negative. Color negative has different colors correlated to the sensitivities of color positive emulsion layers.

Color positive stock records one color image aspect in each of its three emulsion layers and, after printing, is developed.

When optical sound tracks are required for color positive release prints, the picture images are printed first. The sound track image is then printed and developed. Development of the picture image is the last step.

When magnetic sound tracks are required, they are placed on the release prints after printing and developing.

From squeezed (anamorphosed) or large area negatives, Technicolor manufactures Cinerama, CinemaScope, VistaVision and SuperScope color release prints.

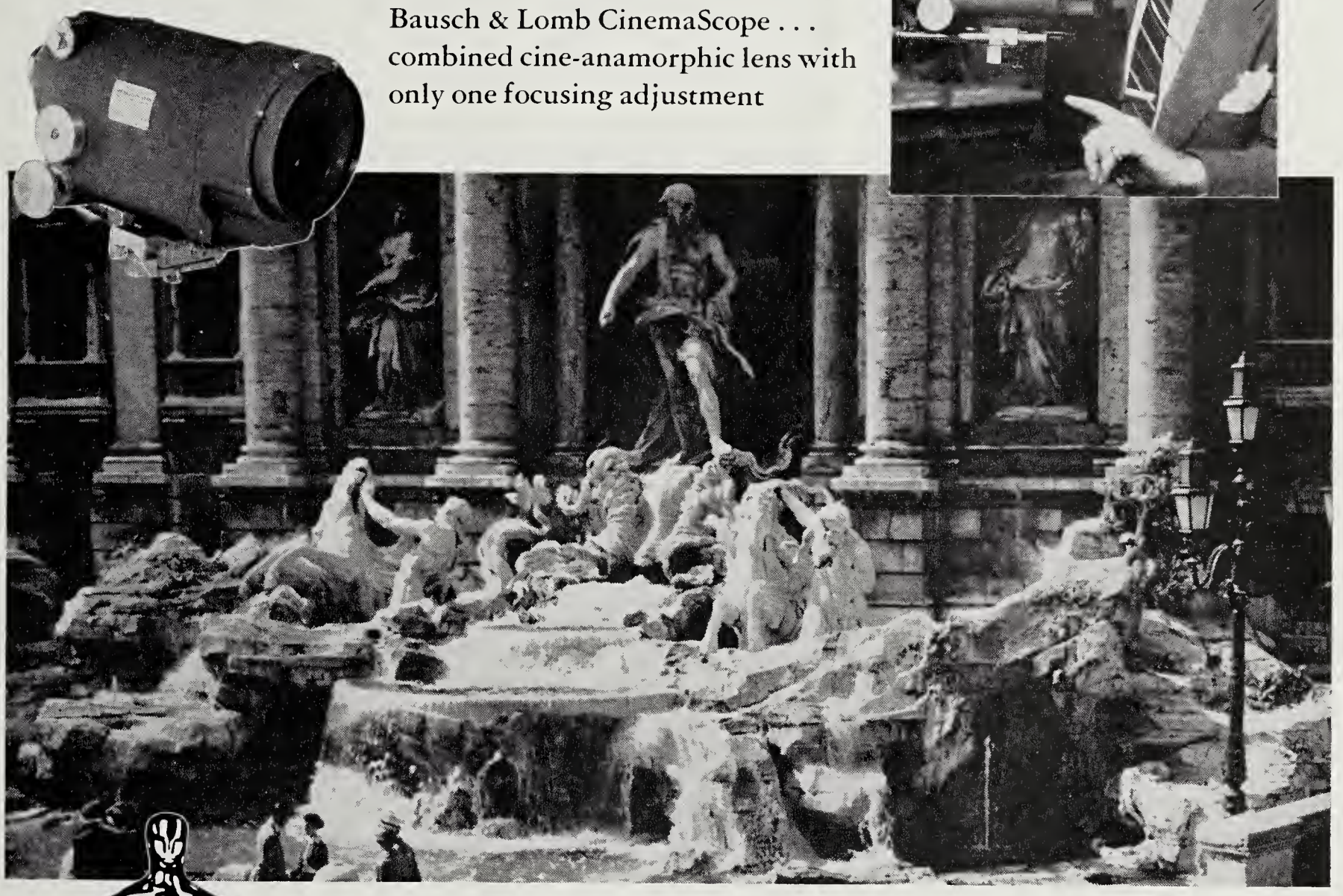
The original version of the above article appeared in *Technicolor News & Views*, the house publication of Technicolor Motion Picture Corporation. The article has been modified in several respects with the approval of Technicolor.—*Ed.*

Milton Krasner, ASC



the lens

Bausch & Lomb CinemaScope . . .
combined cine-anamorphic lens with
only one focusing adjustment





the result

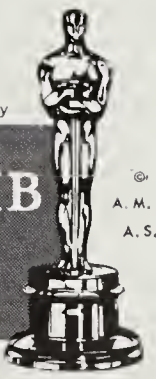
Academy Award, 1954, for color
cinematography in the 20th
Century-Fox production, "Three
Coins in a Fountain"

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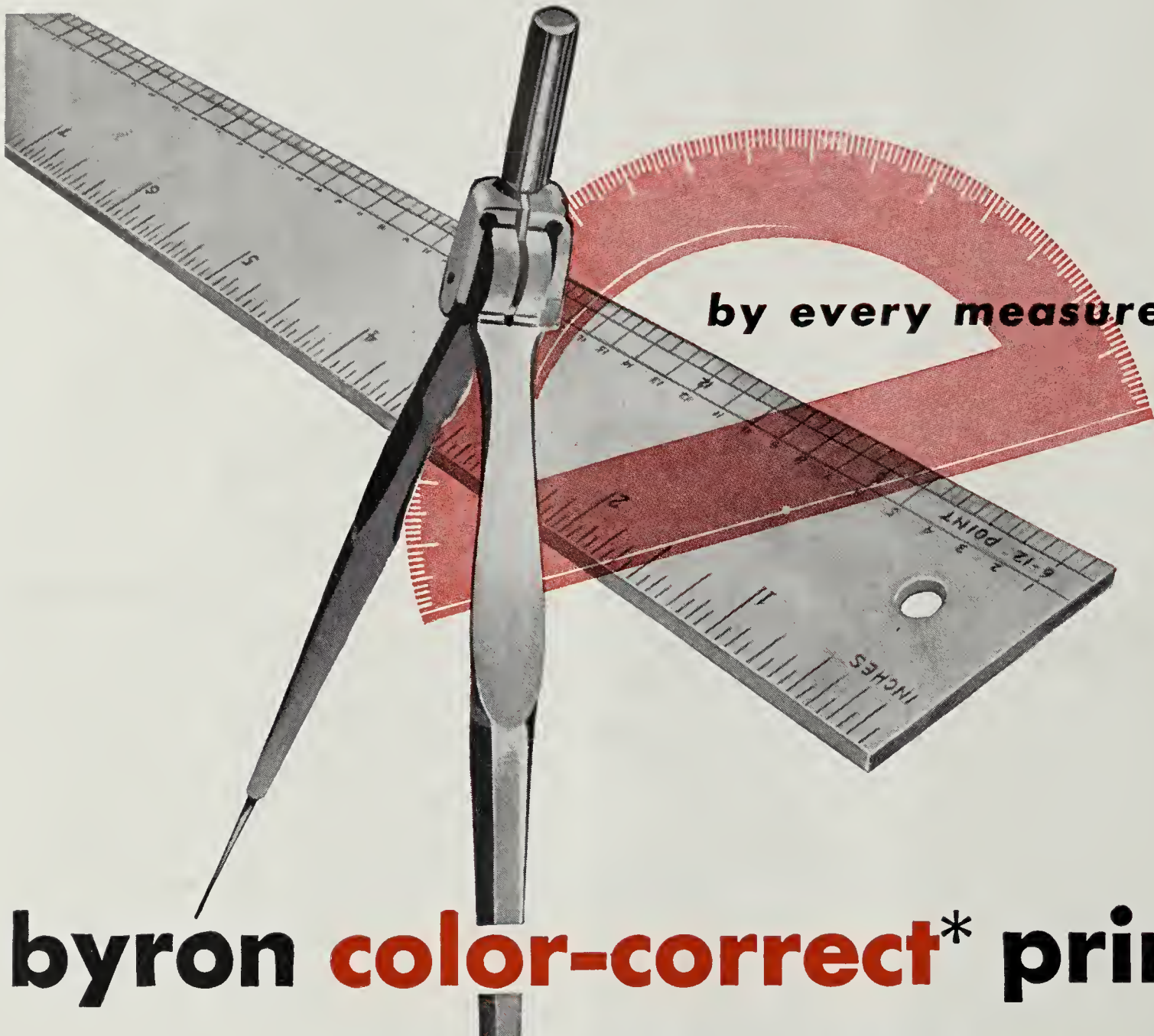
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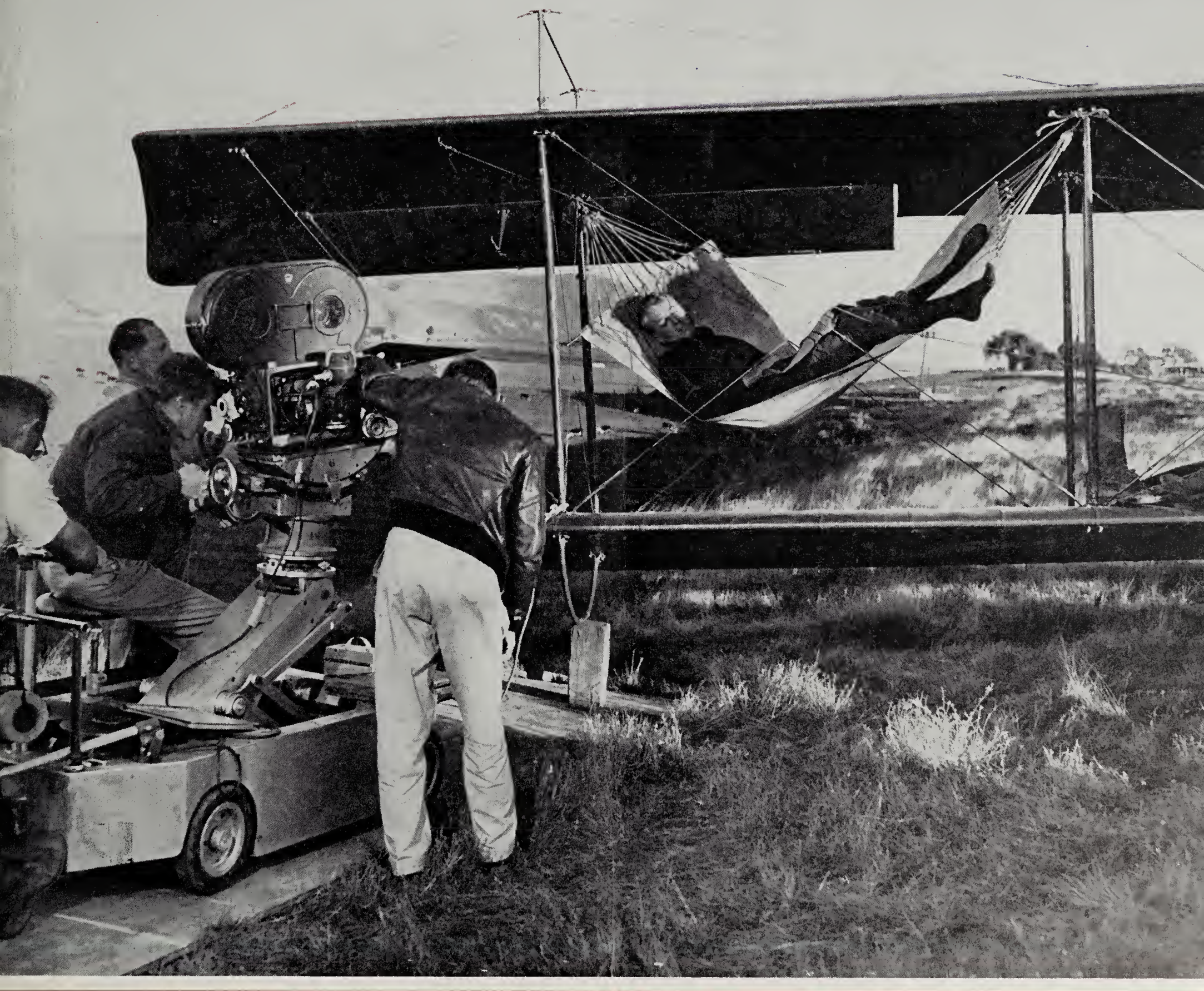
AMERICAN

FEBRUARY • 1956

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

Howard Clairmont



In This Issue . . .

- Pictorial Emphasis in Cinematography
- Preparation of Short Technical Films
- The Drama of Color in Cinematography

25c

FOREIGN 35c



Manufacturer's Twenty Member Motion Picture Unit sets up to shoot Northrop F-89D all-weother jet interceptor for sequences in Northrop Troining Deportment film.

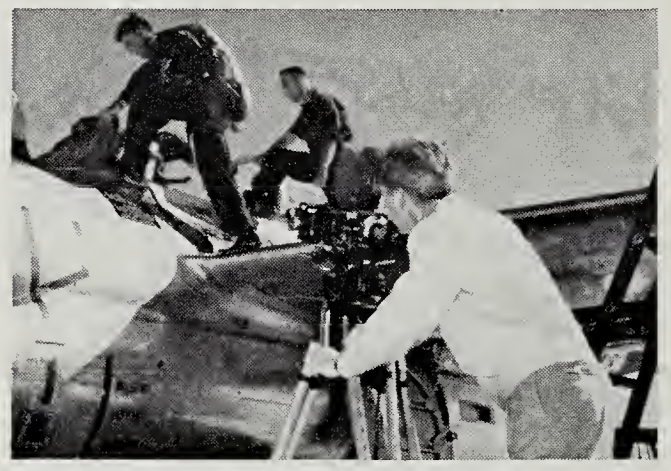
INDUSTRY'S USE OF 16MM CAMERAS BROADENS

Northrop Aircraft Demonstrates Expanded Industrial Use of Mitchell Cameras

Over 100,000 feet of film were shot last year by two 16mm Mitchell cameras operated by a full-scale motion picture unit at Northrop Aircraft. Operating daily throughout the year, these 16mm cameras provide impressive evidence of the rising role of professional motion picture equipment in American Industry today.

Northrop, a leader in airframe and missile manufacture, makes diversified use of their Mitchell cameras. Motion pictures range from employee activities to engineering test films—where re-shooting is impossible and where steady, accurately-framed film of superior quality is consistently delivered by Mitchell cameras.

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Alaska Bound test pilot Bob Love ond Columnist Morvin Miles being filmed by Mitchell comero for Northrop Public Relotions Department.

For Quality Control Film, Mitchell comero moves in for close shots of Scorpion F-89D.

104 Rocket Salvo of twin-jet F-89D is coptured on 16mm Engineering Test film.

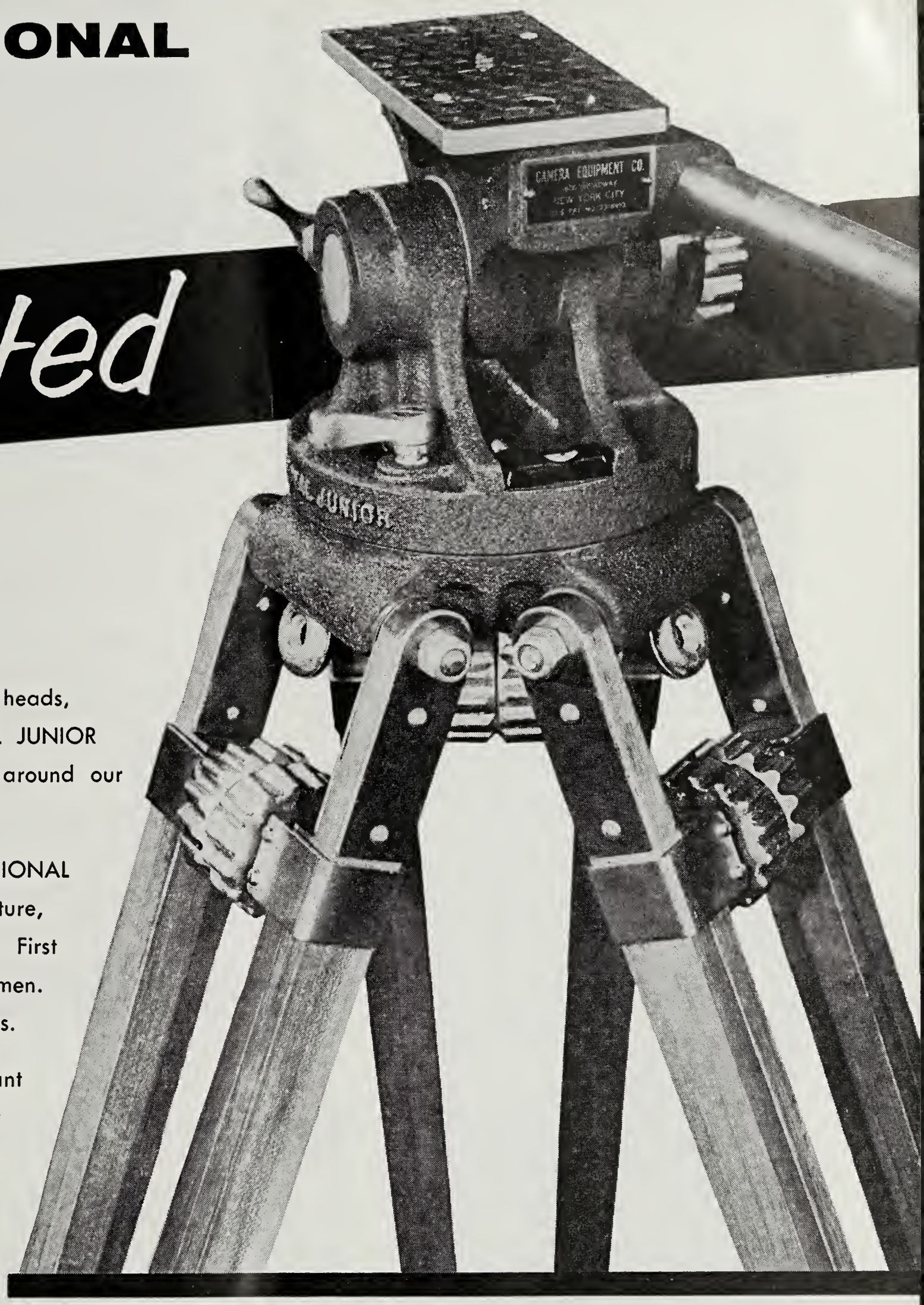


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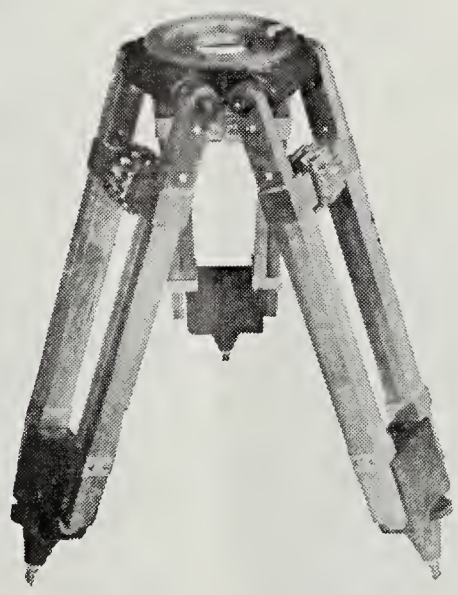
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Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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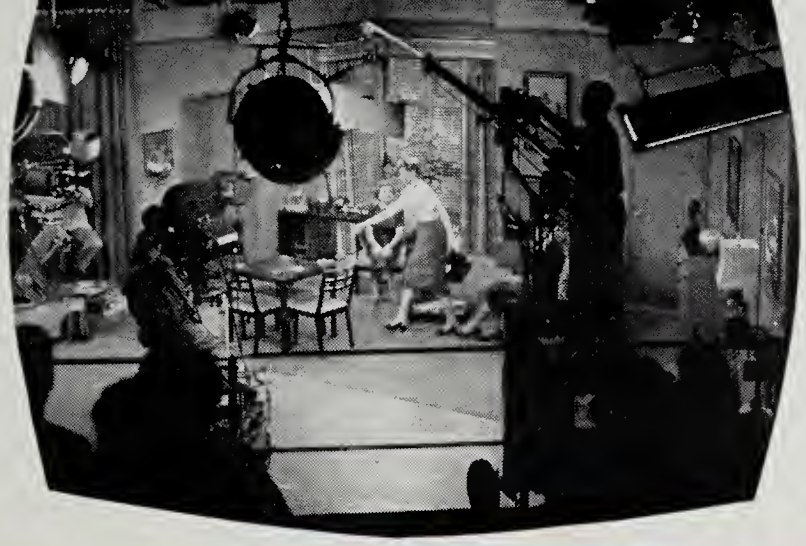
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ON THE COVER

TAKING ADVANTAGE of the unique lighting of slanting rays from late afternoon sun, a Warner Brothers' camera crew shoots a scene for "Spirit of St. Louis," featuring Jimmy Stewart (in hammock) as Charles Lindbergh. Robert Burks, ASC, (not shown) directed the photography.—*Photo by MacJulian.*

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Canada, $3.00 per year; Foreign, including Pan-American Union, $4.00 per year. Single copies, 25 cents: back numbers, 30 cents: foreign single copies, 35 cents; back numbers, 40 cents. Advertising rates on application. Copyright 1956 by A. S. C. Agency, Inc.



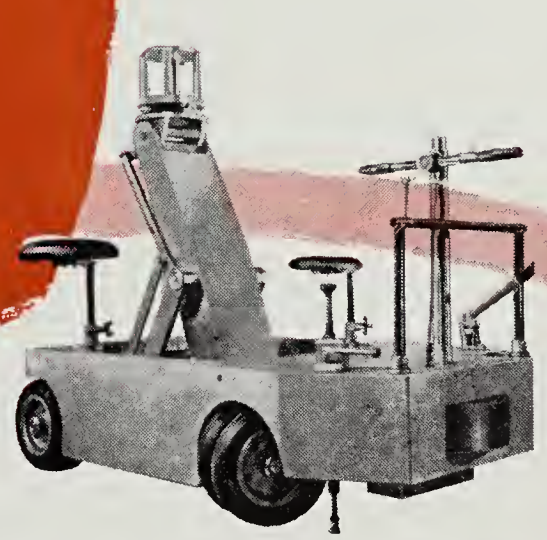
*Based on recent ARB Audience Composition Studies of Network Situation Comedies.

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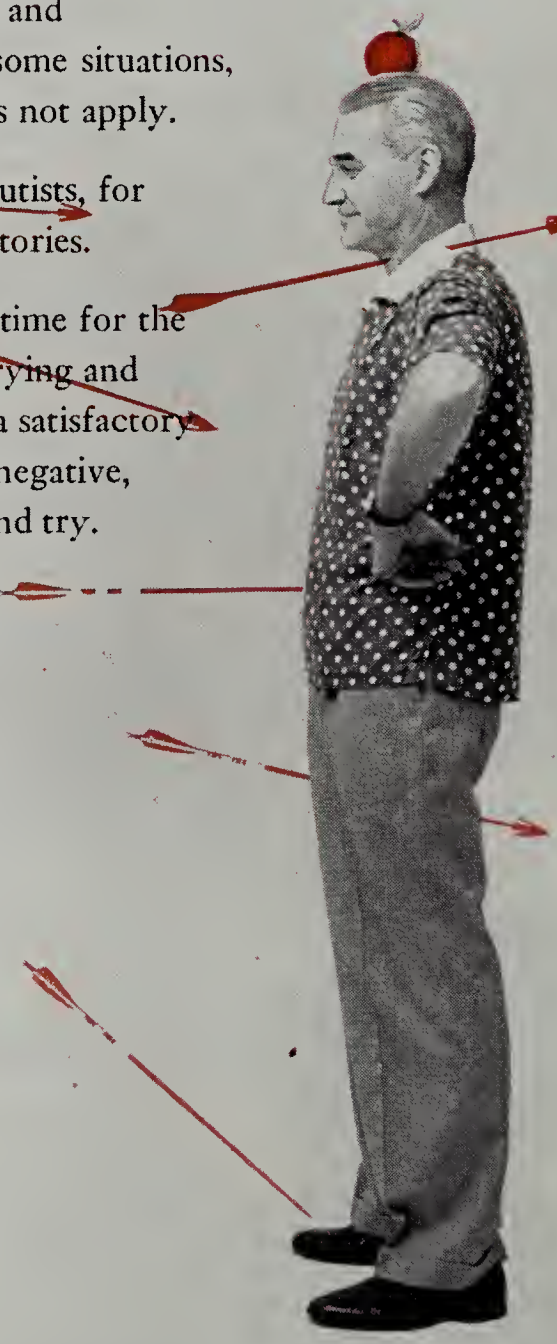
IF AT FIRST YOU DON'T SUCCEED, TRY, TRY, TRY AGAIN...*

This is excellent advice for mountain climbers, aspiring writers and pole-vaulters. There are some situations, however, to which it does not apply.

We're thinking of parachutists, for example—and film laboratories.

A film lab loses precious time for the producer while 'trying, trying and trying again' to arrive at a satisfactory print. And in the case of negative, of course, there is no second try.





For parachutists we have no counter-advice. For film producers we recommend the complete 16mm and 35mm services including 16mm color printing offered by...

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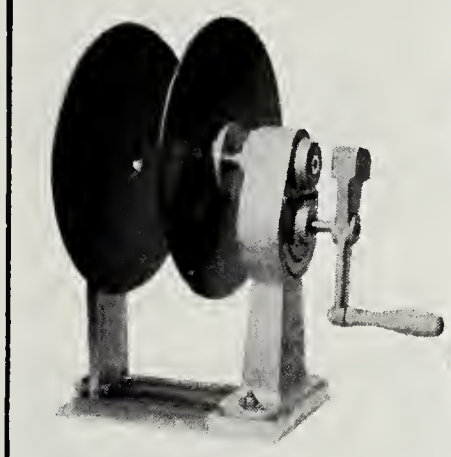
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design NAIDICH / photography LEVITT



hand rewind



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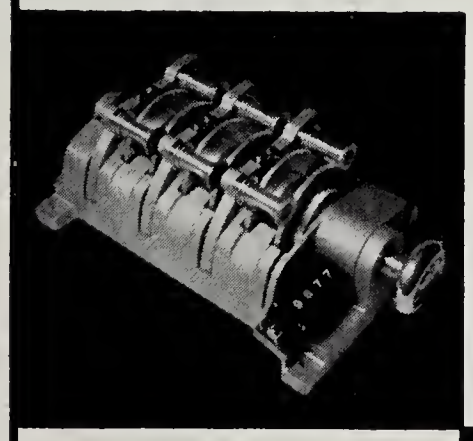
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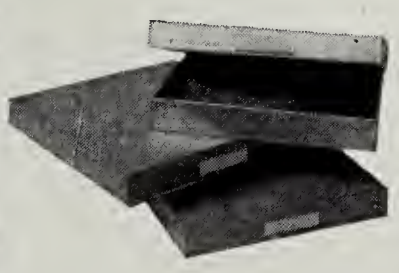


film racks

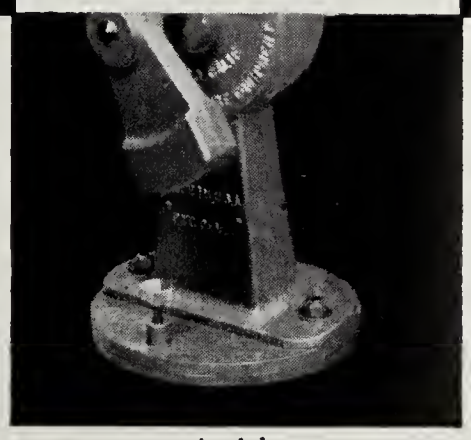


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A feature is facility for mounting handle for either left or right hand operation. Head fits either American or European tripod screws. The pan and tilt action which may be done simultaneously, may be locked with a simple set screw. An adapter plate is available having a two-way spirit-level for use with Junior "Pro" tripods. Also, a professional heavy-duty model is available for use with heavier cameras.

DuPont 70mm Film

The Photo Products Dept. of DuPont announces availability of a number of DuPont motion picture films in perforated (ASA-proposed Type II, MP positive) or unperforated 70mm size. Films now available in this additional size are:

Safety negative films (available in 100 or 1000 ft. lengths): Type 904E, Superior 1 fine grain panchromatic; 908E Fine grain duplicating panchromatic; 926E Superior 2 panchromatic; 927E Superior 3 panchromatic; and 931E high-speed rapid reversal pan.

Safety postive films available in 1000-ft. lengths are: 925E fine grain release; and 828E fine grain master. Also available is safety leader stock in 1350-ft. lengths. Prices and delivery information may be had from any DuPont district office.

Improved Filmosound

Bell & Howell Co., Chicago, Ill., announces a new case and new features have been added to the Filmosound 16mm optical-magnetic rceording projector at no increase in price.

New features includes case with acoustically treated aluminum doors, a Neoprene-cushioned handle for carrying comfort, and a smart two-toned grey



finish of scuff-resistant spatter enamel. Also an 8-inch speaker replaces the former 6-inch speaker. Other improvements include a rack-and-pinion type tilt and longer pressure plates to hold the loop with "green" or new film.

New model, known as 302-C, replaces the old model 202 and retails for $719.00.

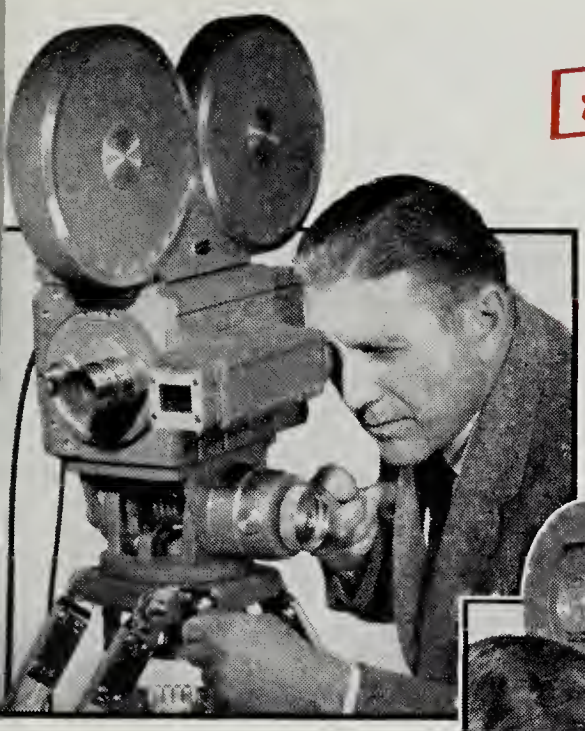
16mm Film Processor

Milford Film Machine, Milford, Conn., announces a new small compact reversal and negative-positive 16mm film processor which features a straight friction drive clutch of exclusive design and a variable-speed motor. Other features include heavy-gauge stainless steel tanks, full daylight operation, and utmost simplicity in operation. Leader length is only 112 feet.

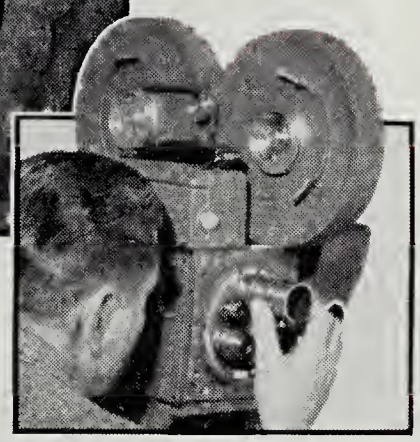
A compact 4 ft. (length) by 2 feet (wide) by 2 feet (high), processor weighs but 200 pounds and lists for $1495.00.

(Continued on Page 70)

Auricon Hollywood



"Auricon Pro-600"
with Single-Lens "C" Mount,
Tele-Finder Objective, plus
Standard Auricon Finder.



"Auricon Pro-600"
with Critical Ground-Glass Focussing,
available on 3-Lens Turret Model.



Preferred by PROFESSIONALS... THE ALL NEW "AURICON PRO-600" for 16mm optical sound-on-film

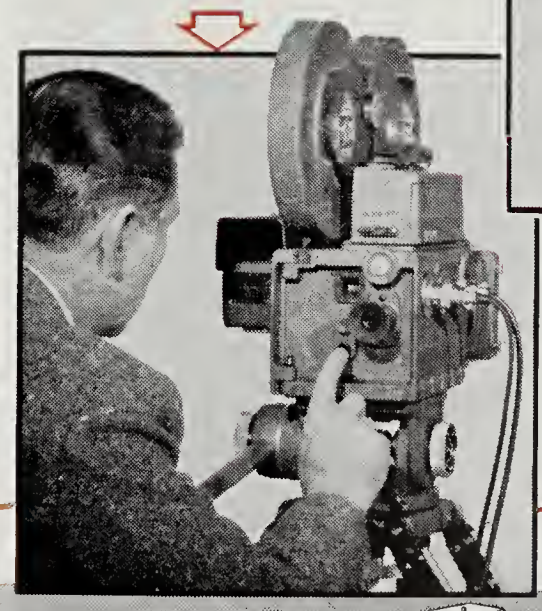
- ★ Self-blimped for completely quiet studio operation. The whisper-quiet film flow of The "Auricon Pro-600" is silent proof of precision design. Your sound-recording microphone never picks up "Pro-600" Camera noise!
- ★ 600 ft. film Magazines with Auricon-Electromatic Take-up, for 16 minutes of continuous "Talking-Picture" filming.
- ★ Synchronous Motor Drive for "Single-System" or "Double-System" Recording.
- ★ $1,497.00 list... for Auricon Pro-600 "Double-System" professional picture-camera with built-in features. Also available at added cost is "Single-System" equipment for Optical Sound-Track-On-Film, "C-mount" Lenses, View-Finders, Film Magazines, 3-Lens Turret, Critical Ground-Glass Focusing, Lens Sun-Shades, Tele-Finders, etc...
- ★ Sold with 30 day money-back guarantee, you must be satisfied!

Write for free illustrated "Auricon Pro-600" literature and price schedule.

Auricon Hollywood



"Auricon Pro-600"
features Push-Button "On-Off,"
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film-flow mechanism.



"Auricon Pro-600"
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"Zoom" type Lens
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Auricon Hollywood

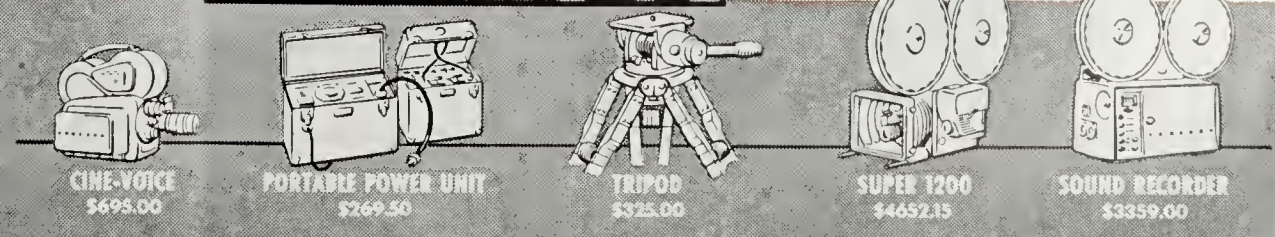
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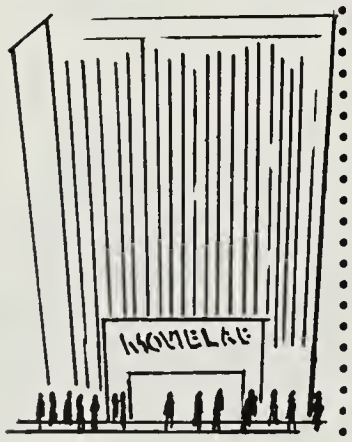


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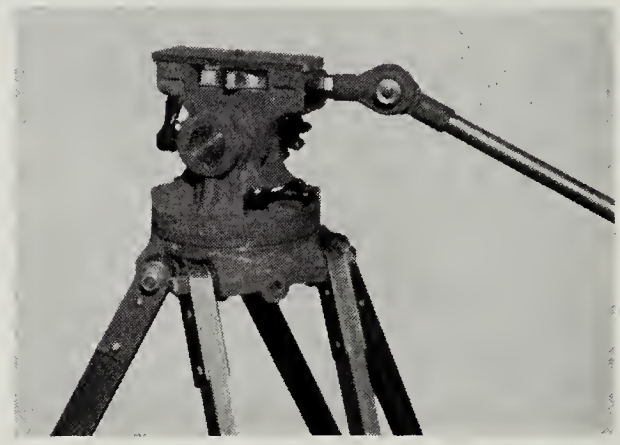
WHAT'S NEW?

(Continued from Page 68)

Hulcher Sequence Cameras

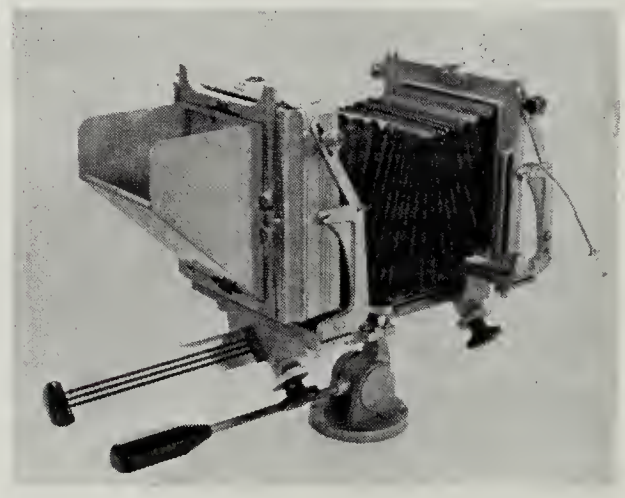
Gordon Enterprises, North Hollywood. Calif., have been named distributors of the well-known Hulcher sequence cameras. The Hulcher 70 press camera makes 5 to 20 pictures per second at exposures of 1/25 to 1/2800 second on 2¼"x2¼" negatives.

A larger high-speed camera designed for Air Force and Navy instrumentation and data recording photography takes up to 50 pictures per second on a 2¼"x5" negative.



Pan Handle Modification

Cinekad Engineering Company, 500 West 52nd St., New York. offers the Quik-Set joint attachment for the pan-tilt handle of the Professional Junior tripod. With the Quik-Set modification, pan-tilt handle can be adjusted to the required angle most comfortable for the camera operator, and it affords more accurate control of camera movement. Interlocking precision-cast teeth insure rigid position of handle. No tools are required to install.

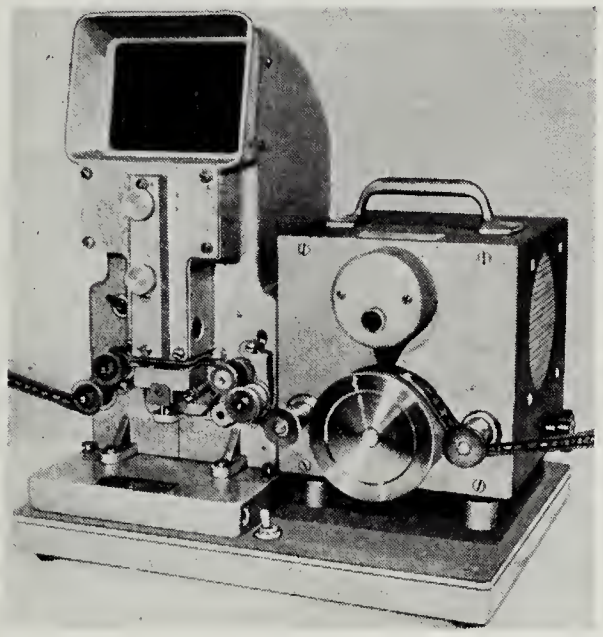


Reflex Viewer

Filmtronics, Inc., 96 Huntington St., New London. Conn., announces a new reflex viewer for the 4x5 Graphic View and 4x5 Graphic cameras with the Graflok back. Viewer has same silver hammertone finish as the cameras named above. It snaps into palce easily and shows the image right side up. List price is $5.95 F.O.B., New London, Conn.

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Edit Your Film Safely with



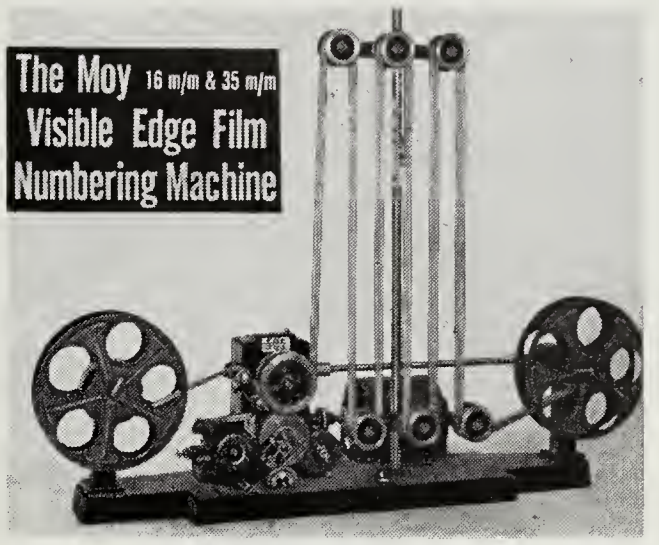
EDIOLA ACTION VIEWER AND SOUND READER

This first low-priced professional 16mm Action Viewer projects BIG, CLEAR AERIAL IMAGE, 3"x4"—operotes left to right—roller smooth action eliminates film scrotching and domoge to sprocket holes; built-in cue marking device; hum-free omplification; synchronized with Precision Sound Readers on Speciol Base or moy be separated for individual use. Write for brochure.

Action Viewer, Sound reader and Base	$362.45
S.O.S. Ediola Action Viewer	139.95
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Film Numbering Pays Off

Unnumbered films cause confusion and loss of time. The MOY edge numbers every foot of 16, 17½, 35mm film and simplifies the task of checking titles, footage.



The MOY replaces cue marks, perfaratians, messy crayans, punches, embossing—daes nat mutilate film. Wark prints shawing special effects, fades and dissalves require edge numbering ta keep caunt af frames cut ar added. Multiple magnetic tracks in CinemaScope stereaphonic recardings make edge numbering a MUST. Write far brachure.

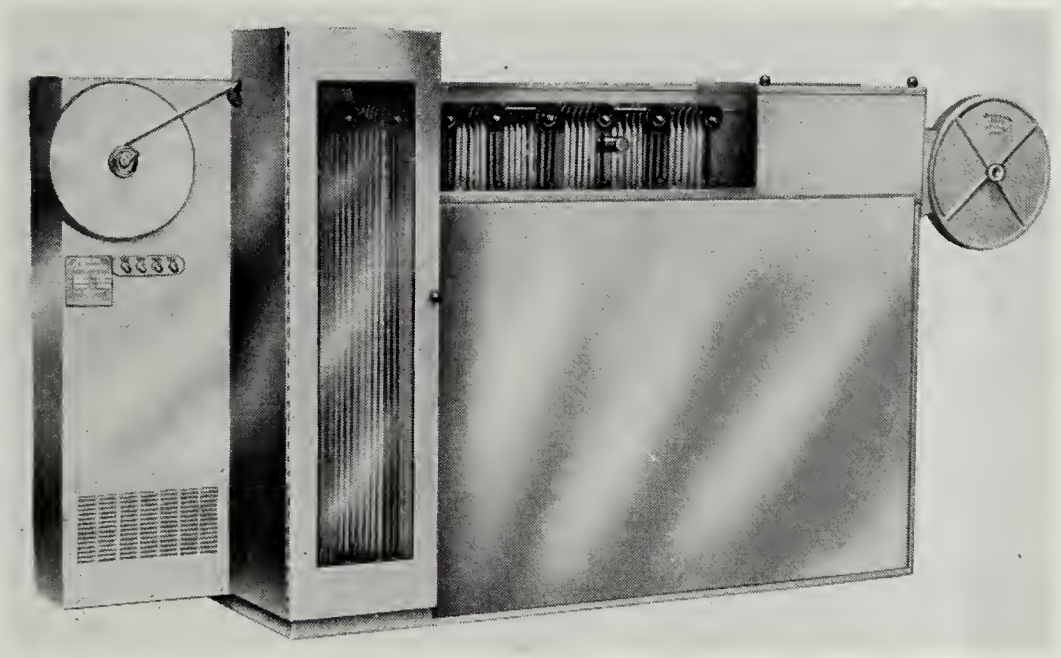
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YOUR QUESTIONS

ANSWERED BY JACKSON J. ROSE, A.S.C.

QUESTIONS of general interest will be answered in this column. We regret that demands on the editor's time will not permit personal replies.—*Ed.*

Q I am planning to shoot a documentary in color in the CinemaScope format, using a 35mm Arriflex camera fitted with an anamorphic lens. Is it necessary that I have sprockets of this camera replaced with the new CinemaScope sprockets in order that this picture can be produced for theatrical showing with CinemaScope equipment?—J.H., Dakota.

Not necessarily. The negative can be processed in the regular manner, and the prints made on standard CinemaScope print stock which, as you know, has sprocket holes of a different pitch than regular 35mm film.

Q Please tell me the difference between "depth of focus" and "depth of field."—A.E.H., Fla.

These two terms are generally misunderstood even by many professional photographers who invariably use the term "depth of focus" when they mean and should say "depth of field." The terms are mixed whenever there is a discussion about extreme depth in photography.

To clarify the two terms: *depth of field* is the extent of that zone in the field or scene in which the definition is satisfactorily sharp. *Depth of focus* is a technical term relating to the properties of a lens and relates to the ability of a lens to define with satisfactory sharpness upon the negative, the images of objects, situated at varying distances. The latter is a fixed condition or quality of a lens; the former—depth of field—may be increased by stopping down the lens diaphragm.

Q In producing a commercial film on farm machinery, I would like to employ a simple method of adding clouds to exterior shots.—B.B., Michigan.

The simplest method is to employ the well-known "glass shot" technique in which clouds are either painted on a large panel of glass or photographed and printed on a large size transparency. This in turn is mounted in a matte box some 18 inches distant from the camera lens in such a manner that the scene in question is photographed through the glass or photograph transparency.

The clouds in the transparency will be recorded on the camera negative along with the rest of the subject matter and will give the illusion of being part of the scene providing the glass or transparency is properly aligned with respect to the horizon line.

Such shots should be made only when there are no other clouds in the sky.

Q Can you give us some details about using the traveling matt process in the production of a training film which we are shooting for a local manufacturer. Is equipment for this work available on the market?—M.J.J., Penna.

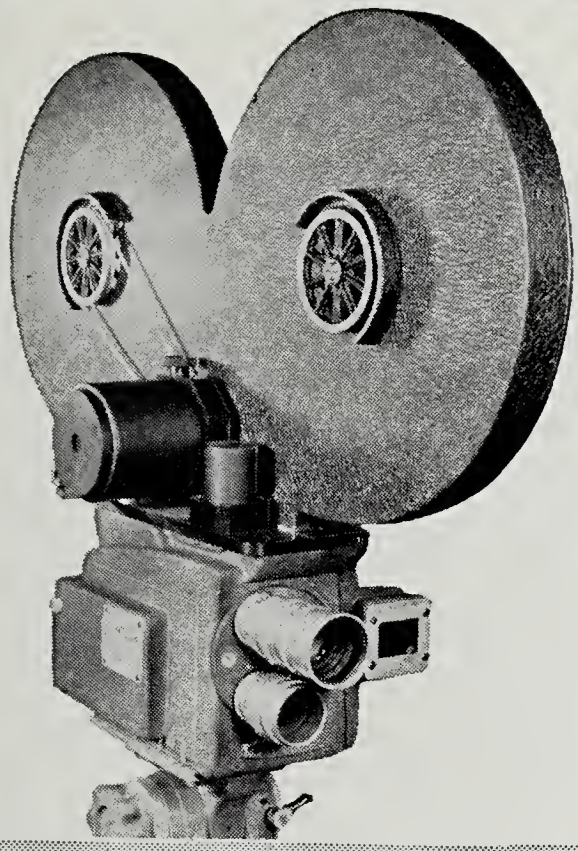
Traveling matt work is a highly technical undertaking for which only the major studios and some large film labs are equipped. Unless you have a great deal of this work to do, it would be advisable to "farm it out" or change your script to eliminate the need for traveling matt shots entirely.

We do not have available a list of laboratories equipped to offer such service and suggest you inquire of the nearest available film processing laboratory.

Q I have an old Bausch & Lomb lens which I plan to have coated. This I will use in a turret along with two new Baltar lenses which, of course, are already coated. Will coating the old lens affect its f/ stop rating? I will be using all three lenses interchangeably on the same production.—V.V.M., Ill.

After the lens is coated, it would be advisable to have it checked and recalibrated if necessary, as coating a lens may increase its light transmission as much as 95 per cent. This would definitely affect the present f/ stop calibrations. Write Photo Research Corporation, 837 No. Cahuenga, Hollywood 38, Calif., for more information on this.

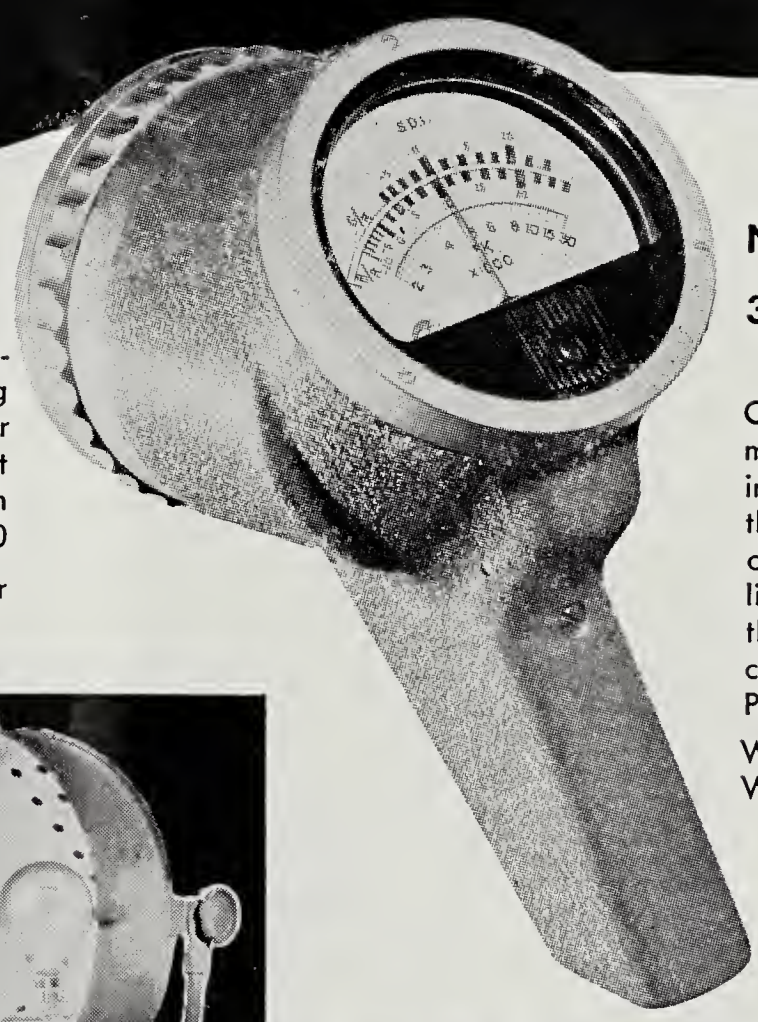
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Positive turret-type Viewfinder with parallax adjustment installed for small additional charge.



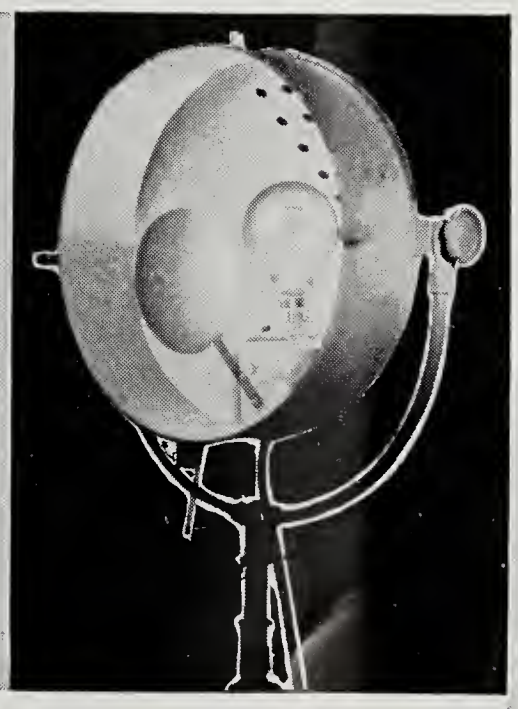
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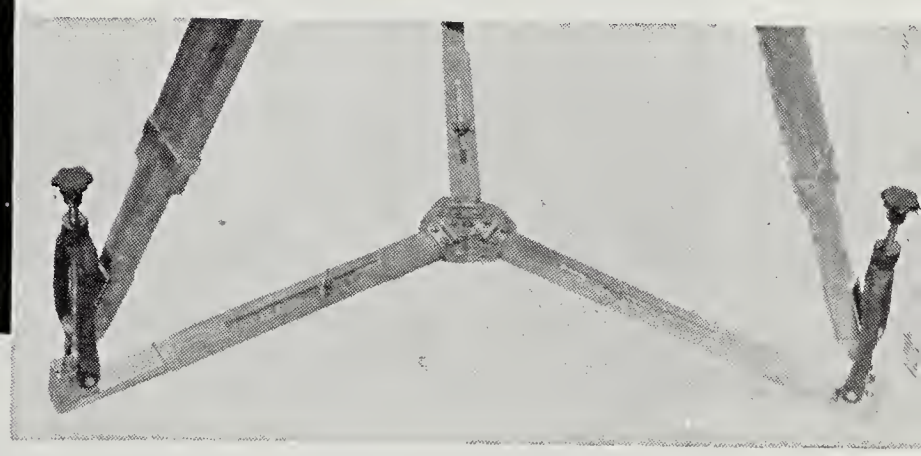
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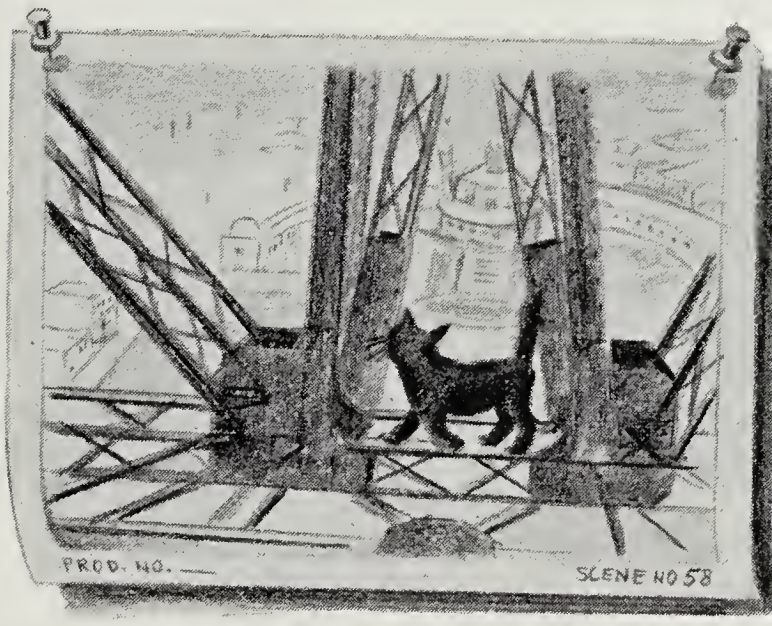
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. . . of a small fry eating an ice cream cone by the Taj Mahal



. . . or a kitten on the Eiffel Tower



. . . or a pretty gal on the beach at Rio



. . . or a herd of long horns in Texas

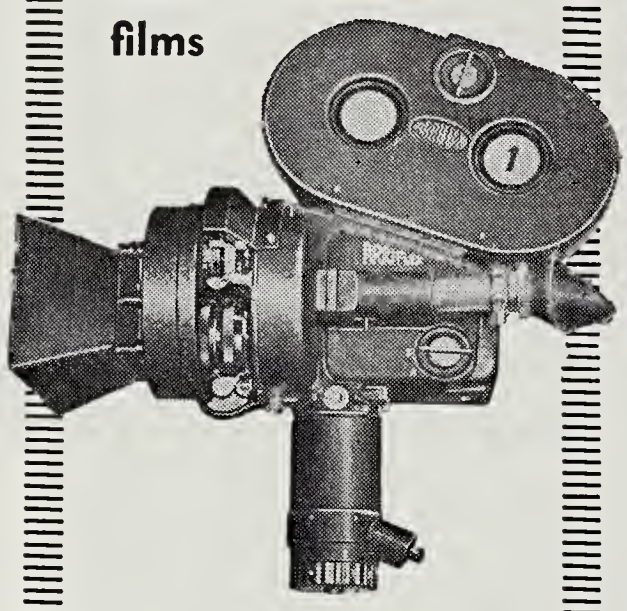
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Hollywood Bulletin Board



BRITISH CINEMATOGRAPHER Jack Hildyard, BSC, (left) while in Hollywood recently, was a visitor to the clubhouse of the American Society of Cinematographers. Here Harry Stradling, ASC, points out some of the Society's directors of photography who have won Academy Awards for photographic achievement. Hildyard has just completed the photography of "Idol" in Mexico for Al Lewin.

Academy Awards for the best achievement in cinematography for 1955 came a step nearer to reality last month when the directors of photography of the Hollywood motion picture studios, in a preliminary balloting, selected ten black-and-white and ten color productions of 1955 as candidate entries for nominations for the annual photographic achievement awards of the Academy of Motion Picture Art and Sciences.

Nominating ballots were subsequently mailed to all directors of photography. The latter will vote to select, from among the preliminary list of 20 productions, five films in each classification as the 1955 award nominees. The balloting will close on Saturday, February 4th, and the results will be announced publicly in a radio-television broadcast from Hollywood February 18.

The twenty candidate productions and the names of their respective directors of photography are:

Black and White

"The Blackboard Jungle," Russell Harlan, ASC, (M-G-M).

"The Desperate Hours," Lee Garmes, ASC, (Paramount).

"I Am a Camera," Guy Green, BSC, (Romulus, British).

"I'll Cry Tomorrow," Arthur Arling, ASC, (M-G-M-).

"The Man With the Golden Arm," Sam Leavitt, ASC, (Preminger-U.A.).

"Marty," Joseph LaShelle, ASC, (Hecht-Lancaster-U.A.).

"The Night of the Hunter," Stanley Cortez, ASC, (Paul Gregory-U.A.).

"Queen Bee," Charles Lang, ASC, (Columbia).

"The Rose Tattoo," James Wong Howe, ASC, (Paramount).

"The Wages of Fear," A. Thirard, (Filmsonor, France).

Color

"A Man Called Peter," Harold Lipstein, ASC, (20th Cent.-Fox).

"Blood Alley," William Clothier, (Warner Bros.).

"Cinerama Holiday," Joseph Brun, ASC, and Harry Squire, ASC, (De-Rochemont).

"East of Eden," Ted McCord, ASC, (Warner Bros.).

"Guys and Dolls," Harry Stradling, ASC, (Goldwyn-M-G-M-).

"Love Is a Many Splendored Thing," Leon Shamroy, ASC, (20th Cent.-Fox).

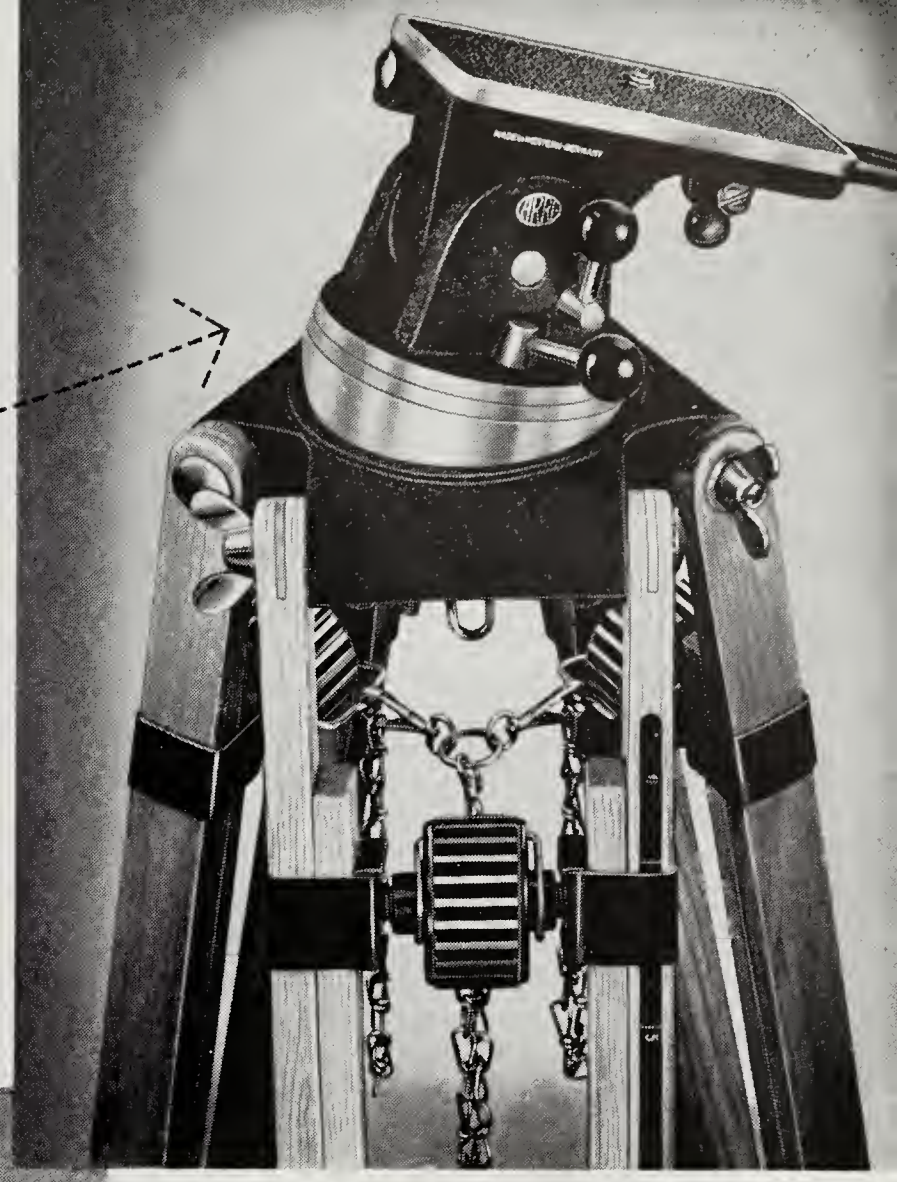
"Oklahoma," Robert Surtees, ASC, (Rodgers & Hammerstein).

"Picnic," James Wong Howe, ASC, (Columbia).

"Strategic Air Command," William Daniels, ASC, and Tom Tutwiler, ASC, (Paramount).

"To Catch a Thief," Robert Burks, ASC, (Paramount).

The Hemispherical Ball-Joint Head

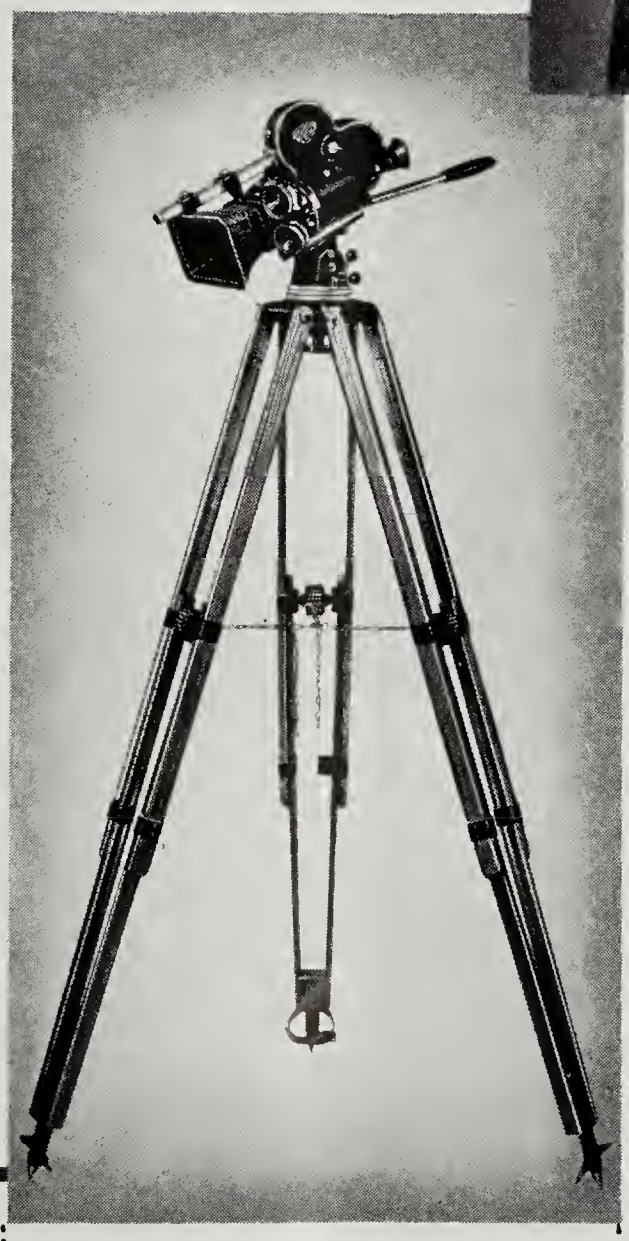


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Maximum	65 inches	21 inches
Minimum	15 inches	9 inches
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PRICE	$175.00 complete	$90.00 less head

NOTE: Prices, Weights and Measurements Include Head, except where otherwise stated, and are subject to change.

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Film Briefs

Ideal for 2 camera TV shows, is F&B's new pair of BNC Mitchells—each with matched sets of 9 Cooke lenses from 18mm to 150mm. Watch for the new series of "Continental" filmed TV shows on NBC for examples of the film quality possible with these cameras.

★ ★ ★

Colortran lighting equipment continues to grow in popularity with location producers. Color-correct, compact, hi-intensity Colortran units draw so little current that no crew would dare to head for location shooting without them. The entire Colortran lines is on display at F&B's showroom—also catalogs are available on request. A few used kits are also available from time to time.

★ ★ ★

Police agencies, both public and private, have recently discovered the remarkable Nominar 1″ f/0.95 lens—"The fastest lens in the world." This lens records on film anything that can be seen with the naked eye. It certainly is not difficult to imagine the many ways that the Nominar can be used in police work.

★ ★ ★

Some new items recently designed and built in F&B's new machine shop are—

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2. Lens extension tube adjustable for Eyemo & Mitchell mounts.
3. Mounting & installation of Bellowscope in Debrie camera.
4. Custom built lens extension tubes.

★ ★ ★

We were handsomely complimented recently by Arthur Modell Productions' Mort Simmerman, as he recalled that using F&B rental cameras on 79 half-hour "Dione Lucas Cooking Shows" without a single breakdown—or loss of a single hour—due to malfunction of equipment.
Which only goes to show that a young outfit like us can't afford to relax our vigilance as regards rental equipment maintenance. With brand-new equipment, top maintenance personnel, scrupulous checking and rechecking of equipment plus the F&B ingredient knows as TLC*—our rental service is seconds to none.

★ ★ ★

We thought that all of our customers had received the little F&B Xmas gift of a set of cuff-links engraved with Mitchell cameras. If we inadvertently failed to send yours, due to a change of address or just a clerical error here, please call or write and ask for it. There are a few sets left—so hurry.

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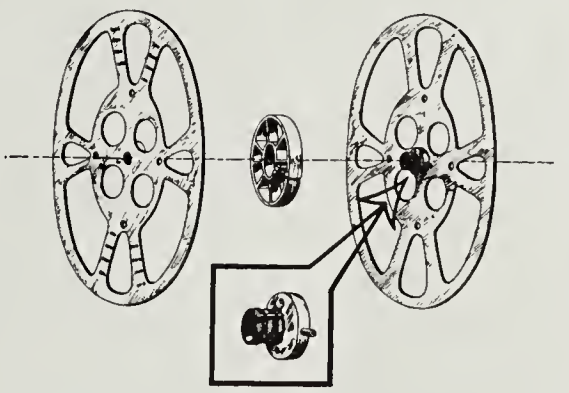
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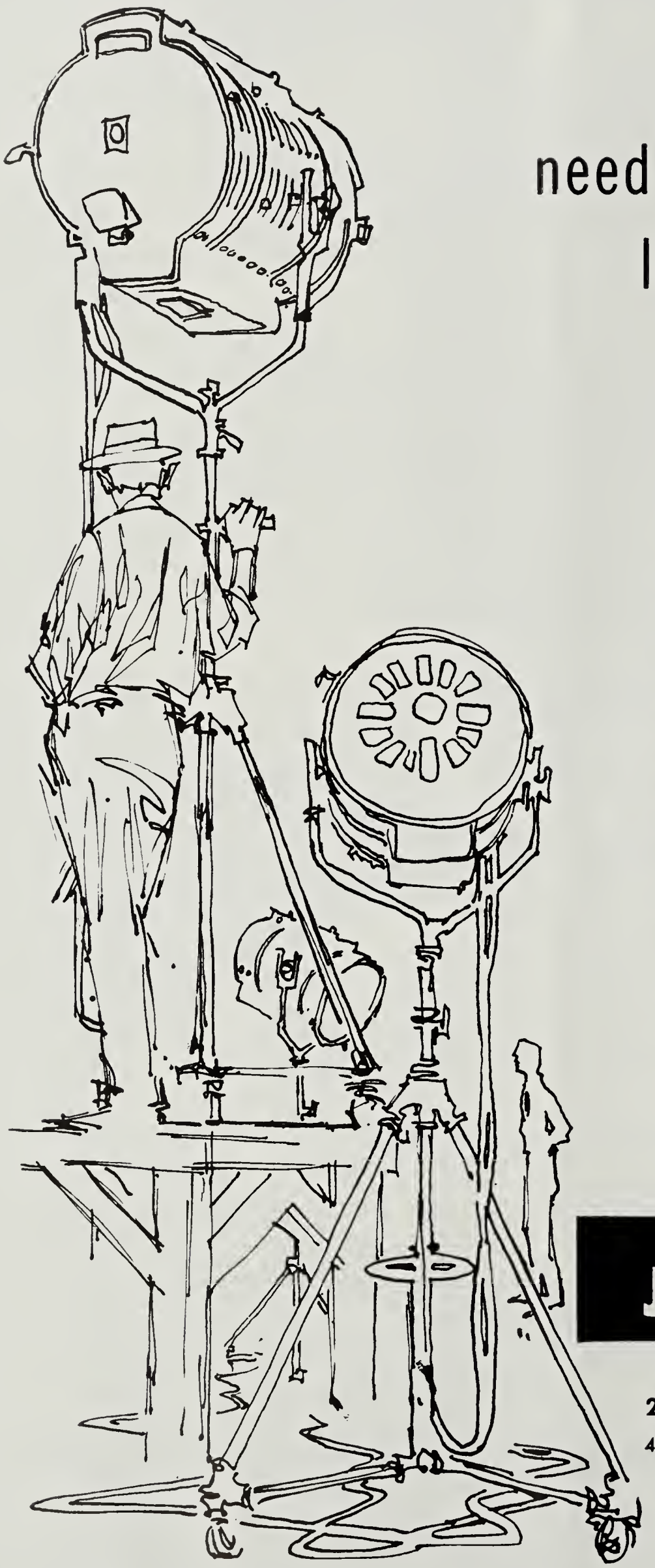
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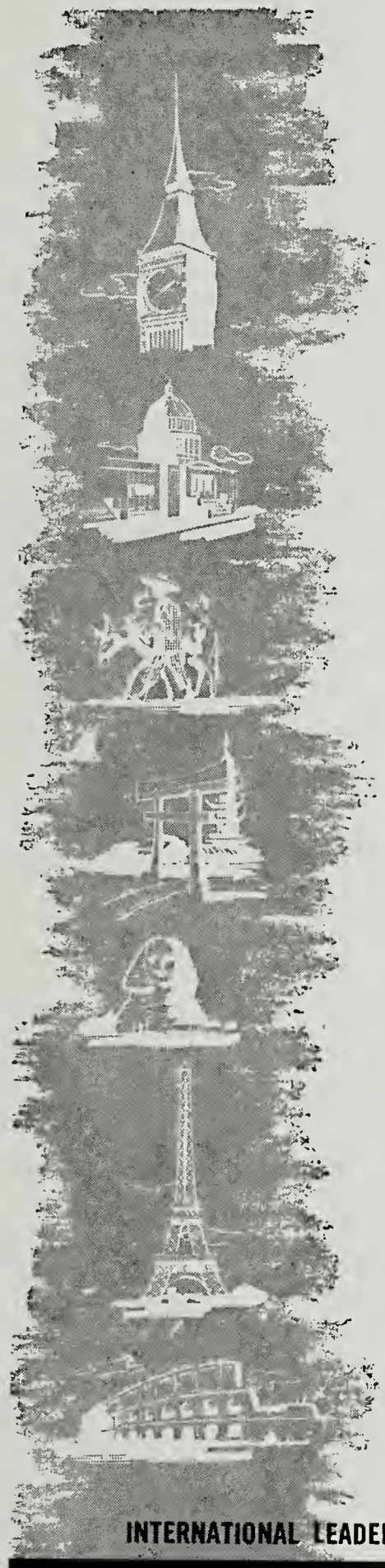
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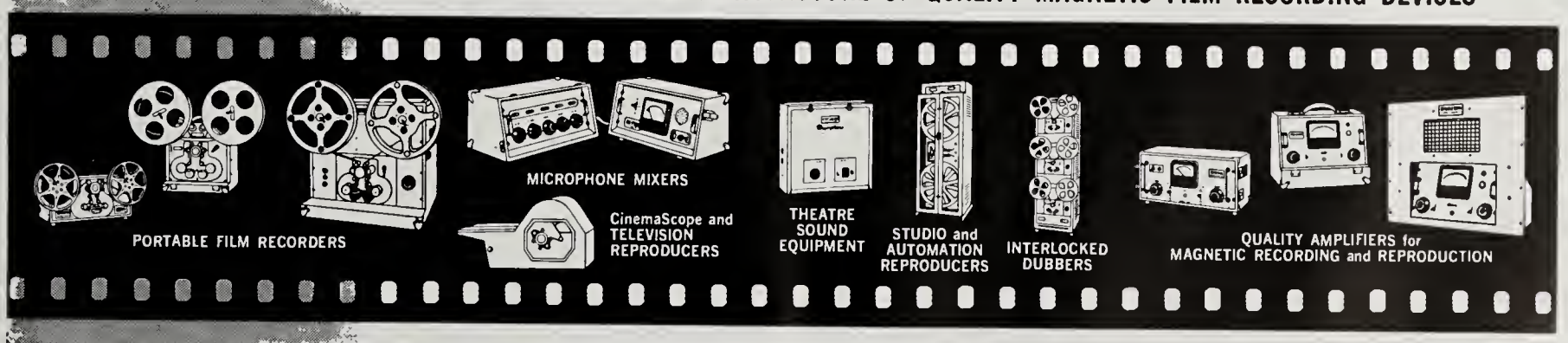
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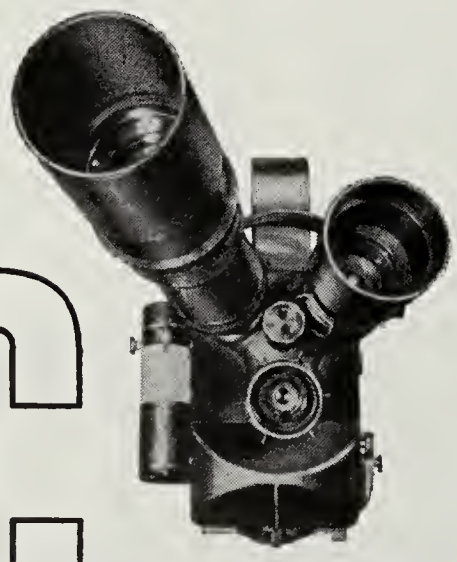
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INDUSTRY NEWS

Newsreel in color—Plans for the first extensive use of color film for TV "spot news" coverage is announced by NBC's "News Caravan." According to NBC executives, availability of the new high-speed 16mm Anscochrome (daylight) motion picture film made it feasible to start tests and plan production for "today's color news film today"—color coverage of news events for network use on the same day.

"News Caravan" has also tested the Anscochrome tungsten film (which will not be generally available for some time) and showed the results at a recent conference of radio and TV editors in Denver. The point made with the showing was this: Until now general spot news coverage in color was not practical because the films available were not fast enough for conditions other than good daylight, and processing generally took days, instead of hours, as needed for "same day" coverage.

• • •

A new idea in motion picture sound stages will become a reality soon when Academy Films of Hollywood, California, begins construction on a new 60′ by 100′ structure to be located at 800 North Seward Street, in the film capital.

Incorporated will be several innovations in sound stage design said to result in faster production, streamlined operation, and a more modern approach to making motion pictures.

Among these will be concrete floor slabs and "tilt-up" concrete walls with a second inner wall for highly improved sound insulation. A special grid will be cast into the concrete floor and will be utilized to tie down motion picture sets without the use of nails. Another reason for use of concrete for floors is the elimination of "squeaks" when dollies and tracks are used.

Some of the stage space will be available for rental to producers of theatrical industrial and television films.

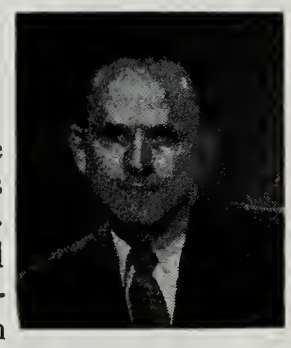
• • •

Sam Browning, vice-president of The Camera Mart, Inc., New York, N. Y., died on January 4, at the age of 54 years. Originally a motion picture photographer, he was a member of Local 644 of the IATSE. He established the machine shop at Camera Mart and directed the manufacture of the many products which bear the company's name.

Active management of the corporation is being continued by his brother, Irving Browning, president, and Samuel Hyman, general manager.

• • •

Capital Film Laboratories, Washington, D. C., has announced the appointment on January 16, of Garland C. Misener as Director of Laboratory Operations.



Garland Misener

Misener, well-known for his technical work in the film industry, comes to Capital from Ansco, where he served as manager of Professional Motion Picture Service. Previously, Misener was attached to Ansco's Hollywood office and assisted in the introduction of Ansco Color film to the industry. He won an Academy technical award for his contribution to the design of the color print scene tester, now widely used in the motion picture industry. He is an Associate Member of the American Society of Cinematographers.

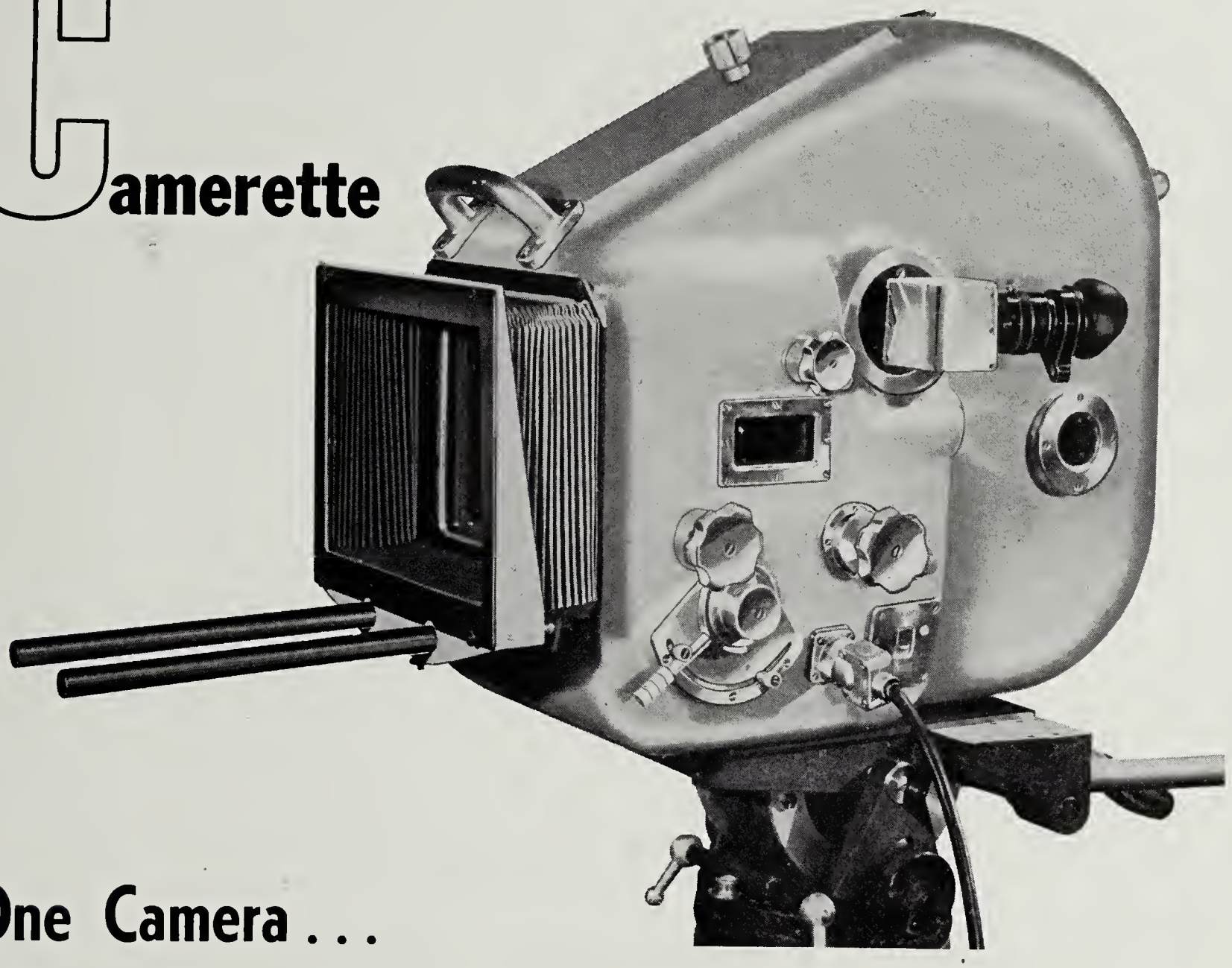
• • •

The fire protection laboratories of the National Bureau of Standards have completed an extensive study of growth of fires and means for their control in storage vaults for combustible nitrocellulose motion picture films. Tests results indicate that through the proper use of sprinklers and film storage racks, it may be possible to limit film loss to the single roll where the fire starts. In this study, the amount of film stored, vent area of the storage vault, sprinkler systems, film cans, types of storage racks, and other variables were investigated for their effects on the amount of film destroyed by the fire and on the gas pressure developed in the vault.

Results show the relative effectiveness of various safety devices in minimizing fire loss and danger to surrounding property. The study was undertaken for the National Archives and for the Inter-Agency Advisory Committee for Nitrate Film Vault Tests, an organization made up of representatives from both Government and private industry.

Summary Technical Report No. 1973 giving full particulars on the tests may be had by writing National Bureau of Standards, U. S. Dept. of Commerce, Washington 25, D. C.

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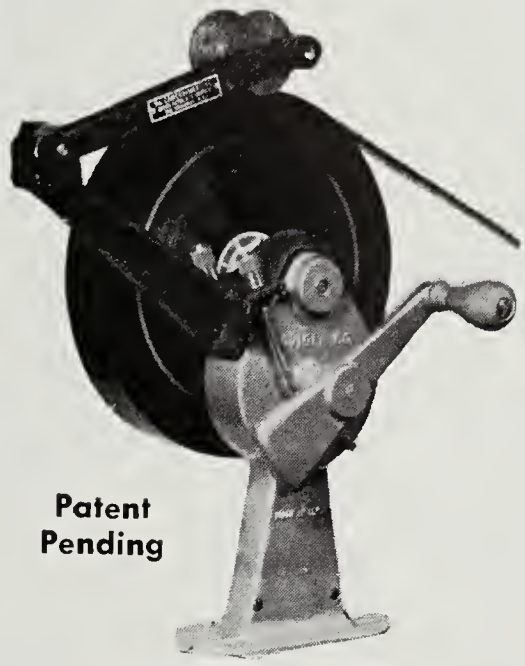
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A STYLIZED pattern of photography was deliberately planned to give the utmost in pictorial emphasis to M-G-M's "Tribute to a Bad Man," starring James Cagney and Irene Papas. Here director of photography Robert Surtees, A.S.C., (left) watches as his camera crew records a scene on location. Miss Papas and assistant director Arvin Griffin are among interested onlookers.

Pictorial Emphasis In Cinematography

The ultimate in this art is displayed in the fine color photography of MGM'S "Tribute to a Bad Man."

By ARTHUR ROWAN

ONE OF THE REWARDING things about seeing "Tribute to a Bad Man" unfold on the screen is the way pictorial emphasis has been made a salient part of this production. Too often photography is considered by a producer simply as the means of putting a story on the screen, and no more. Invariably, much of a story's value is lost when advantage is not taken to utilize all the pictorial possibilities of the story locale, period and characterizations to underscore its authenticity.

Not every producer, nor director for that matter, appreciates this very vital factor in motion picture production. Sometimes it will creep into a motion picture by virtue of the unusual locale or location in which the exteriors are filmed. This is why many productions shot away from Hollywood or on foreign locations have been so well received by American movie audiences.

But photographing a picture on a foreign or remote domestic location is not always enough. For unless deliberate advantage is taken of the unusual pictorial aspects—utilizing them fully in photographic composition—much in the way of pictorial emphasis is lost to the production.

Then there are the pictorial advantages that come from photographing a

production with an eye toward historical authenticity in the decor, furnishings, textures and costumes. This obviously must have its beginning at the time the production is being planned.

It is this accomplishment that underlines M-G-M's "Tribute to a Bad Man." Pictorial emphasis is evident in every scene, yet it never intrudes upon the fine story nor the action. Very subtly it is flavoring the story with a delicate warmth as it unfolds. It is having a compelling effect on you as you watch the screen. You note the meticulous care that has been given to the costuming, to the textures of the materials that went into the construction of the many interior sets, definitely identifying them with the period of the story. And most of all, you note how skillfully director of photography Robert Surtees, A.S.C., lit his scenes and photographed them in CinemaScope and color so that the many fine atmospheric details do not become lost to the audience.

At the time the picture was being planned, this accomplishment was not thought of in terms of "pictorial emphasis." It so happened that director Robert Wise, art director Cedric Gibbons and Paul Groesse, and director of photography Robert Surtees had a kindred feeling about letting the pictorial aspect of the period play an important part in set and scene compositions.

The story is laid in a mountain fastness in the great western wilderness of America around 1870. To impart a true feeling of ruggedness to the story without losing any of the natural pictorial beauty of the locale. Surtees stylized the photography to accent set and locale details through lighting, camera movement and choice of lenses.

For pictorial reference, both the art department and Surtees made a study of the volume, "Picture Maker of the Old West—William H. Jackson," published by Scribners. Jackson was to the Old West what Matthew Brady was to the Civil War—a meticulous photographic chronicler of events and people of the times. His many photographs served to supply details for the construction of such pieces as a hitching post, water trough, and the doors, interior walls, and windows of structures typical of the period. For Surtees, the photos supplied ideas for lighting and composition, for pointing up the photography to complement a characterization or lend greater authenticity to an interior set.

(Continued on Page 109)



NOTE HOW the lighting in this scene does two important things very effectively: 1)directs attention to faces of the three players, Irene Papas, Don Dubbins, and James Cagney, and 2) subtly points up the period decor of the set, lending pictorial emphasis to the scene.



NOTE HERE how the wall behind players is deliberately highlighted to bring out the texture, yet without detracting from the players.



ROBERT SURTEES' stylized lighting places emphasis on Irene Papas in this scene while the lighting on James Cagney is deliberately subdued. The background, meanwhile, comes in for a subtle measure of illumination.



SURFBOARD RIDERS at Waikiki furnished a challenge to camera Ed McGlone and Ted Cate, producers of "Here is Hawaii," for United Air Lines.



CAMERAMAN Ed McGlone shooting surf-riders at Waikiki with his Arriflex "16" mounted on special body brace designed for the purpose. Directing the action is Ted Cate.

Shooting Without A Tripod

Unique camera brace developed by Cate & McGlone for photographing aerial and surfboard shots for tourist film on Hawaii for United Air Lines

By FREDERICK FOSTER

ANY CINEMATOGRAPHER knows that a steady camera is essential to professional motion picture photography. With the average studio assignment, this is rarely a problem. But take the documentary, newsreel or industrial film cameraman. Invariably his are the more rugged assignments calling for anything from shooting from a moving plane while hanging by his feet to making action shots while riding a pair of water skis.

Ed McGlone — the cameraman partner of Cate & McGlone, Hollywood industrial film producers—is a camerman who has had experiences such as these. But he differs from some of his contemporaries in that he usually comes up with an invention of some sort to solve the problem of unsteady camera or camera handling under unusual circumstances.

His latest is a unique combination shoulder-pod and camera mount that serves a dual purpose when shooting must be done without tripod: it makes it possible to secure the utmost stability in the camera, and it offers a measure of protection for the camera from damage in event camerman is thrown off balance when shooting from a roughly-moving conveyance. McGlone got this idea after his camera was wrecked when he was thrown heavily to the floor of a plane while shooting without a tripod or brace of any kind.

The new apparatus, pictured here, was developed after Cate & McGlone were commissioned by United Air Lines to produce a 16mm color and sound film on Hawaii. Plans called for photographing much of colorful Hawaii from a plane, and also shooting a sequence of surfboard riding at Waikiki from a native outrigger canoe. The element of danger was present in both undertakings, and with his earlier experiences to draw upon, Ed McGlone set to work designing the protective camera support which he is shown using in the accompanying photos.

Actually, "shoulder-pod" is something of a misnomer for the gadget. "Belt-a-pod"—already a patented trade name—

is a more apt description; for, as may be seen in the photos, the bracing fits around the waist, then extends upward to a platform. Here, on an adjustable tripod head, the camera is mounted. (McGlone uses either a Cine Kodak Special or a 16mm Arriflex.) On the right hand side is a skeleton framework of tubular aluminum, which has a two-fold purpose: (1) to protect the camera against injury in case it is dropped or comes in contact with any solid, destructive surface while in use, and (2) to provide additional steadiness of the camera when the forward end is held against a tree or wall, as shown in Fig. 1. A handle extending from the base provides a solid grip on the camera and permits the operator to tilt or pan as desired.

Entire construction is of tubular aluminum. The body bracing members are covered with sponge rubber, which in turn is sheathed in leather; the upper framework protecting the camera is made of aluminum tubes of smaller size.

An additional function of the apparatus is to provide support for the camera when not in use; the camera is laid on its right side with the metal framework supporting it. There is appropriate bracing with rubber insulation where the tubing contacts the camera.

The brace was particularly helpful to McGlone while shooting the sequence of shots of the coastlines of the five major Hawaiian islands. Because it was necessary for the plane they were using to fly at low altitude, the air currents at the lower levels made it extremely rough going at times. The same was true when McGlone shot similar footage from a helicopter.

But the real test came when Cate and McGlone set out in an outrigger canoe to film the world-famous surfboarding scenes at Waikiki beach. Working in close in the surf meant the outrigger would pitch and toss, making it difficult to hold a camera steady. But with the body brace in use, and letting his body swing with the motion of the outrigger, McGlone had no difficulty in getting reasonably steady action shots of the surfriders. Without the camera brace, he says, it would have been impossible and likely would have resulted in losing the camera overboard.

The production, tentatively titled "Here is Hawaii," will, when completed, screen for 29 minutes and will bring to audiences color scenes of the important places to visit in Hawaii today. Idea, of course, is to kindle an urge to visit Hawaii, and especially to fly there and back via United Air Lines' luxury air liners which daily fly an estimated 264 passengers to Honolulu from the West Coast.

"Here is Hawaii" is the second major production by Cate & McGlone for United Air Lines. Their first, "Highway to Hawaii" has been screened before an estimated 25 million persons to date. More than 600 prints have been made and put to use.

For the current production, Cate & McGlone are shooting both Commercial Kodachrome and regular Kodochrome. "Each emulsion fills a specific need," says McGlone. "We use regular Kodachrome whenever we can because it has the greater resolving power that gives us the detail we desire in long shots." UV filters are invariably used with both emulsions, especially for long shots and aerials.

One of the big problems encountered on this production was the unusual

(Continued on Page 119)



FIG. 1—DETAILS of body-braced camera support are shown here. Note how protective framework at right of camera is being used here to steady camera against tree. Panning and tilting is by means of handgrip in foreground.



FIG. 2—SHOWING opposite side of the camera support. Entire construction is of lightweight aluminum tubing. Note battery pack for camera motor on shoulder harness.



SHOOTING scenes of surfboard riders from an outrigger canoe. Here, use of camera brace made steady pictures relatively simple to achieve.

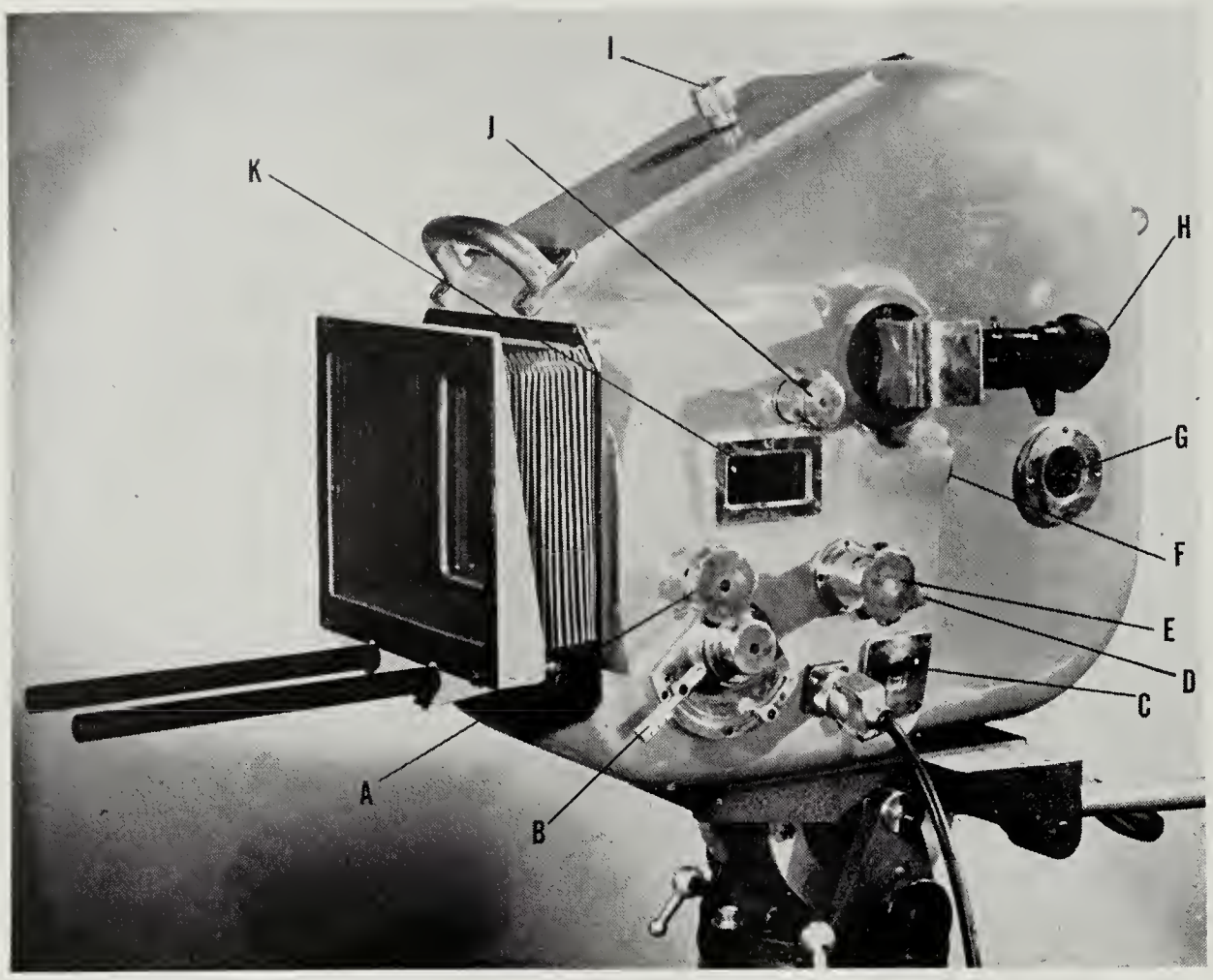


Fig. 1—CAMEBLIMP, engineered especially for the Eclair Camerette, affords complete external control of camera at all times. Features include: "A", follow-focus control; "B", lens diaphragm control; "C", power switch; "D", pushbutton for internal viewing light; "E", camera threading knob; "F", rear viewing port; "G", port for observing film footage counter; "H", reflex viewfinder eyepiece; "I", knob for taking fill or eye light; "J", reflex mirror control; and "K", window for viewing lens markings.

New Blimp For The Camerette

The ultimate in soundproofiing is just one of many advanced features of the Eclair Cameblimp which takes either the 35mm or 16/35mm Camerette.

By LEIGH ALLEN

WITH THE INTRODUCTION of the new Camcblimp designed by J. Mathot and A. Coutant for the Eclair Camerette. this rugged and versatile motion picture camera is given new stature as a tool for professional motion picture production. The many features of the Cameblimp complement thosc of the Camerctte and thus broaden the scope of production to which the Camerette may be applicd.

A paramount consideration is the fact that with a combination 16/35mm Camerette in thc blimp, one has a fully equipped motion picture camera for either 16mm or 35mm film production —the one unit serving cither film ficld. and utilizing thc same motor, lenses. etc. Thc fact that film loads are limited to 400 fect—the maximum capacity of the magazines—is no hinderance to using the blimped Camerettc for major production work, becausc the uniquc Eclair magazines are ready-thrcaded and instantly interchangeable, so that what is normally a "re-loading and re-thrcading" operation for other motion picture cameras is a simplc 5-second operation with the Camerette. The blimp is opened, the camera swung out, the used magazine detached, and a fresh one slipped in in its place. Similarly, inspecting the aperture plate may be done just as quickly, and there is no rethreading of film after inspection.

The blimp shell and door are lightweight magncsium castings, featuring "egg-crate" type of construction. The latter combines extreme rigidity with maximum strength, and at the same time provides the necessary space for accommodating the patented sound-deadening material that gives the blimp its unusual soundproof quality. The exterior finish is smooth, gray enamel, with all fittings plated. Net weight of blimp and camera, including loaded film magazines, is 100 pounds.

As may be seen in Fig. 3. the camera is mounted on a retractable base within the blimp. The base is double-insulated and travels on a rubber track. When it is necessary to change magazines or to give the camera other attention, the single door of the blimp is opened and the camera swung out for easy access.

The Camerette, being a reflex-type camera, the reflex feature is made accessible from exterior of the blimp. This requires no modification of the camera; whcn the camera is returned to its normal taking position, it is automatically aligned with the external eyepiece. This, incidentally, may be swiveled upward to facilitate convenient operation of camera when used at low levels, as shown in Fig. 2 below.

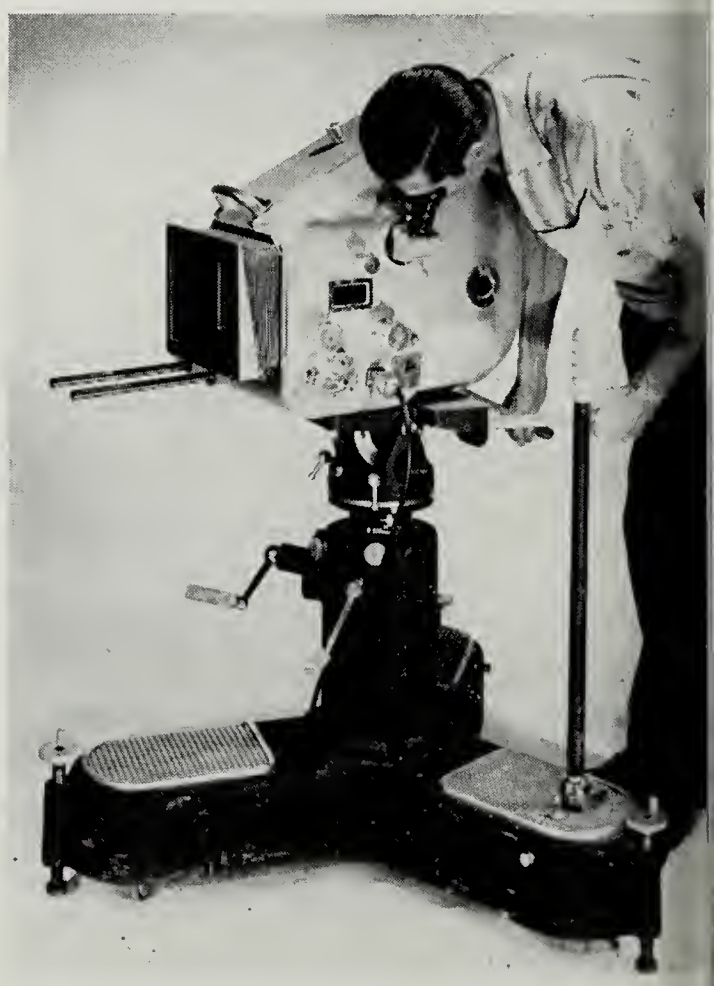


Fig. 2—EXTERNAL eyepiece of reflex viewfinder may be swiveled upward to facilitate convenient operation of camera when used at low levels as shown here. Mobile camera support shown is also a product of manufacturer of Cameblimp.

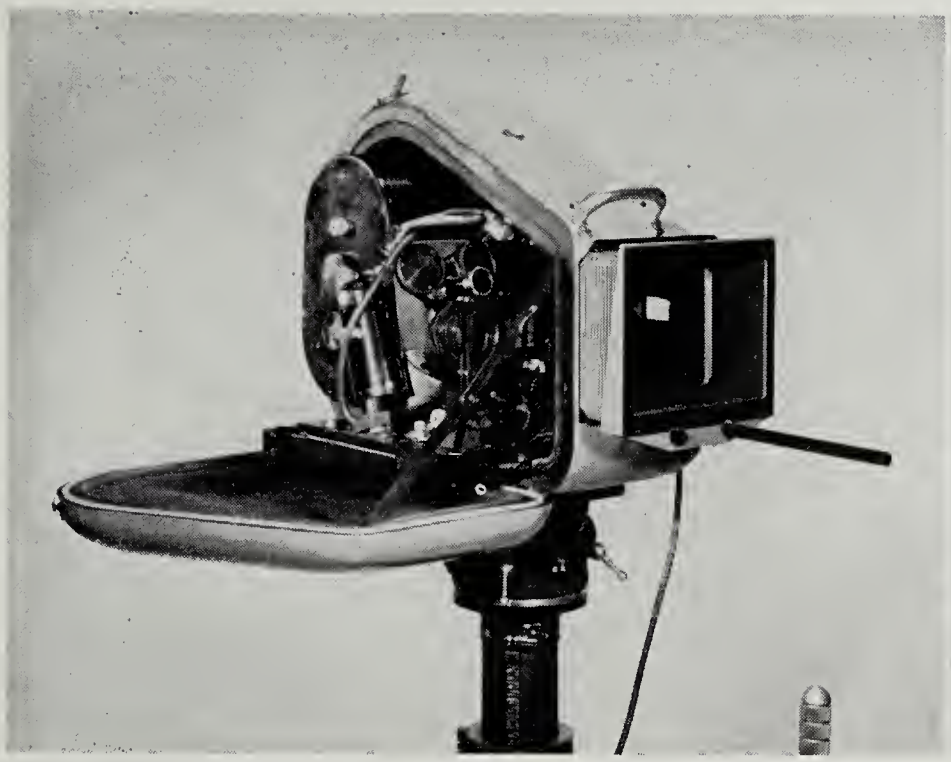


FIG.3—The single door of the Cameblimp is opened here to reveal the retractable carriage on which the Camerette is mounted. This affords quick and easy access to camera for changing magazines, checking aperture plate, etc. Also to be seen is the dual 3" by 3" filter holder in front of camera lens.

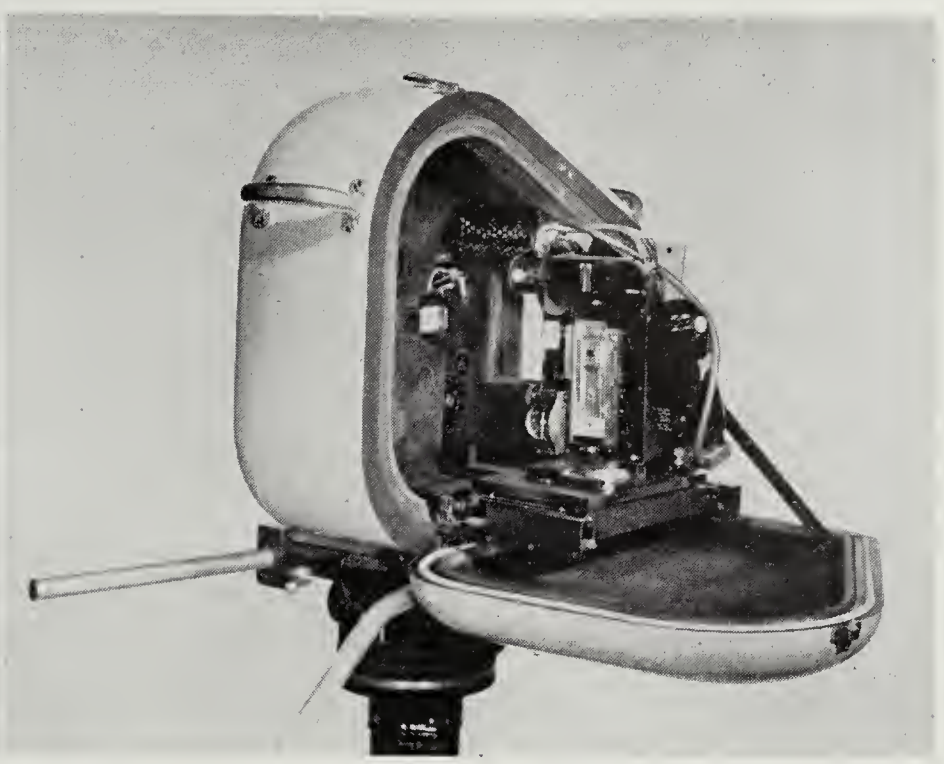


FIG. 4—Here the magazine section of the Camerette has been removed to afford better view of the retractable carriage which slides out readily for inspection of camera. When camera is returned to position and blimp door closed all contacts with external controls are automatic and properly aligned.

The Cameblimp introduces no parallax problems, because viewing the image is through the taking lens, via the Camerette's reflex system, which is extended to the outside of blimp, as already stated above.

Convenient external controls are provided for setting focus, lens diaphragm, and follow focus, so that once the camera is loaded with film and the blimp closed, there is no need to open it again until it is necessary to change magazines.

The Cameblimp is probably the only blimp which permits working with an 18½mm wide-angle lens without picking up structural interference. The matte box rods. for example, are in two sections so that whenever a wide-angle lens is used, the forward half of the rods are removed to exclude them from lens range.

Further evidence of the skillful engineering that went into the designing of the Cameblimp is seen in the unique way that camera sound is completely damped through use of rubber couplings wherever a camera part, such as a control knob or lever, extends to join an external control. There is no metal-to-metal contact anywhere between the camera and the external fittings or the Cameblimp itself.

As may be seen in Fig. 1, all external controls and viewing ports are confined to one side of the Cameblimp. On the opposite side is the single, full-size door having a single lock. This is probably the only camera blimp which affords a clear, unobstructed view of the lens marks at all times, making it unnecessary to transfer such data to a supplementary external disc or tape. Observation of the lens settings is by means of the window "K," Fig. 1. There is a lamp for illuminating interior of blimp which is automatically switched on as the camera is started. At other times, the lamp is momentarily lighted for quick reference to the lens marks, as well as the footage counter, by depressing the button "D," Fig. 1. The film footage figures are observed through the port "G."

An important feature is that which provides for opening up the lens diaphragm for focusing, then stopping it down again for shooting, same as with many still cameras. This is accomplished by moving the diaphragm control "B," Fig. 1, to left. There are two check-screws on the guide plate which permit setting the range of the diaphragm control lever, so that it will always be returned to the f/stop established for shooting the scene.

The external matte box is of the telescoping bellows type and may be extended a maximum of 10". Inside the blimp, mounted on the camera carriage are two 3" by 3" filter holders. These are positioned immediately before the taking lens.

A single 6-wire cable feeds power to the camera, regardless of which of the two available motors are used: the 220-volt, 3-phase synchronous motor or the 110-volt, 60 cycle AC sync motor. Thus it is unnecessary to have two sets of power cables, and the bother of changing cables also when the motors are changed is eliminated.

The Cameblimp may be mounted on any professional tripod or mobile camera unit by means of the conventional screw, or a dovetail mounting bracket.

As a means of recapitulating the salient features of the Cameblimp, reference is made to Fig. 1. "A" is the external follow-focus control. The lens diaphragm control is at "B." The power switch is shown at "C" and the push-button for flashing on the internal lamp for illuminating lens and footage dials is shown at "D." "E" is the camera threading knob by which the camera mechanism may be advanced to open the shutter for reflex viewing of scene when camera is stopped. The port by which the camera operator may observe the lens setting from rear of camera is

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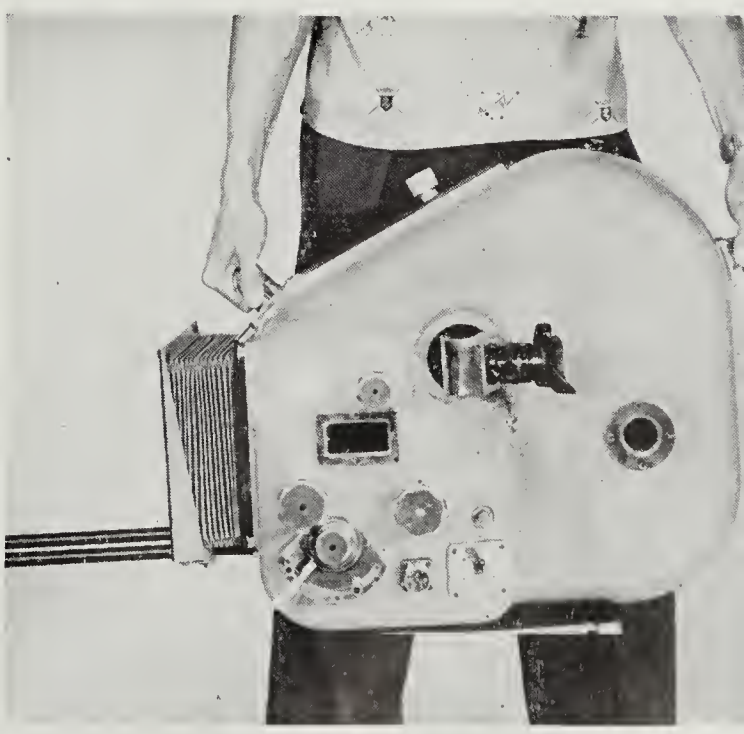
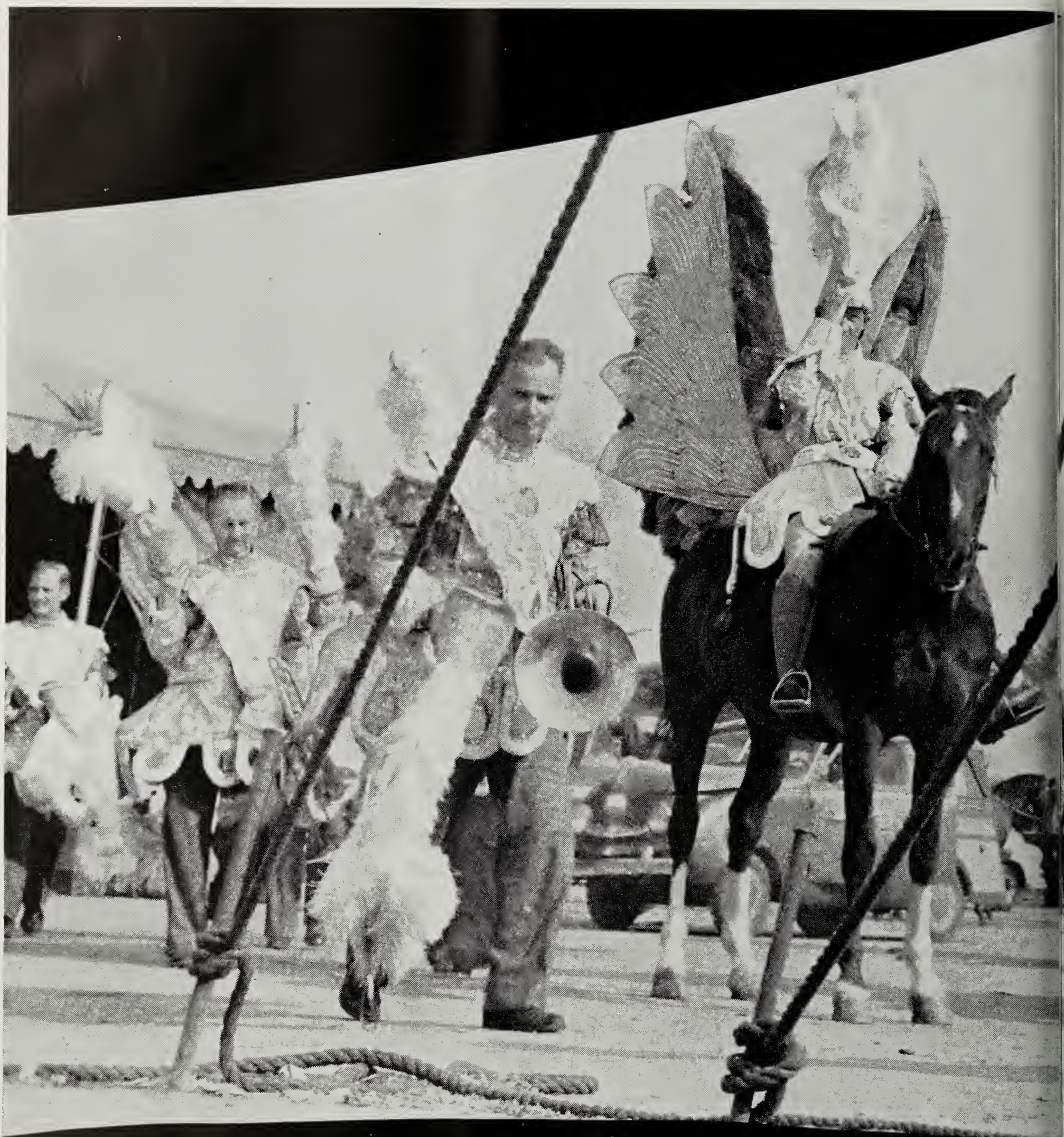


FIG. 5—Two convenient handles make it easy to carry the Cameblimp with camera inside. Net weight with camera and loaded magazines is only 100 pounds.



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Shakespeare In VistaVision

The requirement of extreme depth of field in every scene made VistaVision a logical choice of cameras for Sir Laurence Olivier's "Richard III," photographed in England by Otto Heller.

By HAROLD BENSON

"THEY TELL ME you're a good cameraman," said Sir Laurence Olivier to Otto Heller, B.S.C. "Well, if you work on 'Richard III,' don't try and win yourself an Oscar."

"Working for you is Oscar enough," Said Heller.

"And don't flatter me, either!" retorted Olivier.

That was Otto Heller's first meeting with Britain's most celebrated actor-director-producer. "Richard III" was being planned as an even more powerful production that "Henry V" and "Hamlet," and Heller, along with seven other cameramen, was interviewed by Sir Laurence during his efforts to find a director of photography who would do justice to his film conception of the story.

Heller was chosen. He has been filming in Berlin, Paris, Hollywood and London since 1918, but he told me he still trembled when he was first approached in connection with "Richard III." "After all," he said in magnificently fractured English which defies reproduction in print, "I might work on a costlier production, some kind of super-epic, but it's difficult to think of any film which would carry more prestige value."

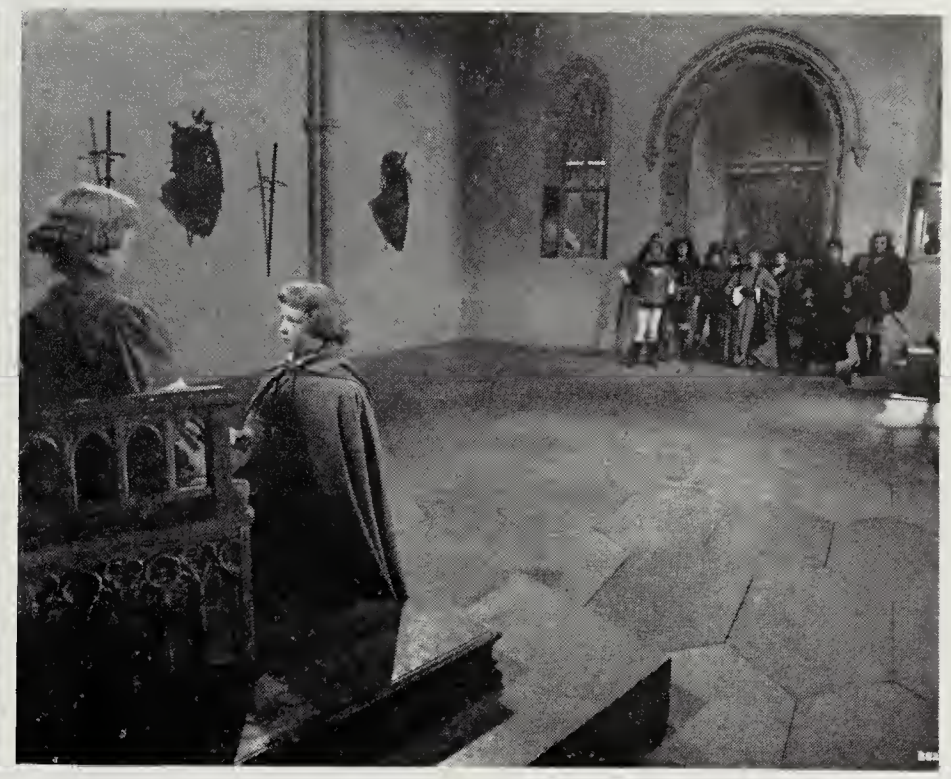
In less than forty years Heller has worked on "at least 150 films—silent, sound, monochrome, color, CinemaScope and VistaVision." He still remembers his first sound film. "I'd always had the habit of muttering a sort of running commentary on the action to myself under the hood in the silent days," he told me. "The first day on this talkie I did the same quite automatically—'Here comes the girl into the room, moves from the table to the chair, sits down, that's all, cut.' Of course, the mike picked it all up. I'd been concealed by the hood; and it took them hours to trace the commentator."

OTTO HELLER, B.S.C., (left) who photographed Sir Laurence Oliver's "Richard III," is shown on location in London where he photographed Ealing Studios' "The Lady Killer." Here he watches actor Herbert Lom explain the Technicolor camera to his son, Nicholas.





TYPICAL SCENE in "Richard III" demanding extreme depth of field in the photography.



EVEN GREATER demand was made on the camera and lighting to achieve maximum depth in scenes such as this.



THIS IMPORTANT dramatic scene was lit and shot two different ways, with cameraman Heller's format proving best of the two.



DELIBERATELY stylized studio exterior which demanded extreme care in the lighting to impart same atmosphere as in real exteriors.

Heller has shot more than thirty films in Britain, including a number of those rare productions which have drawn praise for the cameraman from the critics, such as "The Queen of Spades," "The Rainbow Jacket" and "The Divided Heart." In Hollywood he worked on "The Crimson Pirate," his first major color feature, and "His Majesty O'Keefe." One of his own favorites is his "Never Take No For An Answer."

On "Richard III" Heller worked in close cooperation with the other major artists and technicians long before shooting began. Olivier went through the script scene by scene with Heller, Carmen Dillon, the art director, and Roger Furse, the designer, until all shared the same visualization on the whole film. The team worked so closely together, in fact, that Furse designed several scenes from Heller's lighting plans.

Two weeks were spent rehearsing the distinguished cast before the camera, together and individually, in order to save camera rehearsals on the set. As a result there was exact maintenance of the daily schedule during production. In the eleven weeks of studio shooting Olivier completed a record of 165 scenes. (This is something of a contrast with "Henry V" and "Hamlet," which were a year and six months on the floor respectively.)

Four weeks of location work in Spain preceded the studio shooting. The matching of these battle sequences with the studio closeups provided Heller with some of his worst headaches. He described to me how he juggled with filters and lights, referring every couple of seconds to frames from the location material to insure exact matching.

"Richard III" is in VistaVision and Technicolor. Originally Olivier and Sir Alexander Korda planned to use Todd-AO, and Heller had packed and prepared to fly to Arizona to see "Oklahoma"—the first Todd-AO production—in the making. VistaVision was to be

(Continued on Page 119)



THE BASIC element of the dramatic screenplay is conflict. Without a certain opposition of characters and elements there can be no drama. Audiences easily tire of a story that runs too smooth.



THE IDEAL script is so arranged that each sequence builds higher than the last. An excellent example is Warner Bros.' "Miracle in the Rain," for which a scene is being shot here in New York.

Preparing The Script

PART II

The story should begin in an active key—one that is lively, dramatic, interesting, or rich in suspense.

By CHARLES LORING

IN THE FIRST part of this two-part article, which appeared in last month's issue, I pointed out that the film script should be as carefully planned and prepared as a homebuilder's blueprint, and that the motion picture—being an action medium—should be written and produced with the emphasis on action, rather than dialogue. The preparation steps for writing a script were described up to the point of continuity; so this month we shall proceed from there.

In breaking down the treatment into scenario form, the first step is to divide the action into sequences. A sequence is a series of scenes which, when joined together in their proper consecutive order, put across a unified idea or phase of the story action. Most stories logically divide themselves into separate sequences. A study of the treatment will reveal where one phase of the story ends and the next begins. For simple comparison, one might say that a sequence in a screenplay is like a chapter in a novel.

If the various sequences are thought of as separate units, it will be easier for the screen-writer to break down the script. Taking one sequence at a time, he then will divide it into individual scenes or shots. Each of these scenes is, in turn, a unit within itself—but its pattern and meaning will be dependent upon the other scenes that precede and follow it, as well as upon the overall approach of the script. Unless this relationship is recognized and carefully integrated, the script will almost surely lack continuity.

It has been stated that a good script must have a beginning, a middle and an end. But actually it is not quite as simple as that. There are other elements of dramatic construction that must be incorporated into a successful screenplay.

First, the story should begin in an active key—one that is lively, dramatic, interesting, or rich in suspense. There is no place for a leisurely opening in today's screenplay; this tends to lull the audience into an indifferent frame of mind. Also, the opening should establish the locale, introduce the main characters, and explain something of the basic story situation. Suspense, as already pointed out, is a fine thing—but an audience requires certain explanations; it does not relish being left up in the air.

On the other hand, a story opening can be too dramatic or lively. It may actually be more exciting than anything that follows; thus the rest of the film becomes dull and anti-climactic. The ideal script is so arranged that each sequence builds higher than the last. In this way there is an overall rise in audience interest ending with the last or climactic sequence, which should actually be the highest point of action in the story.

In the same way each sequence builds to its own sub-climax before we can move on to treat the next phase of the story. The aim should always be to build up to the best scenes carefully, creating a setting so that when they appear on the screen they will seem to come as a logical climax, rather than merely spectacular shots that have been thrown in for effect.

Obviously, a script cannot continue to build in a perfectly straight line. A schematic chart of the script would properly show a rhythmic pattern of peaks and valleys, like a mountain range, with each climactic peak rising

(Continued on Page 116)

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THE TECHNIQUES used in producing short technical films at Speery Gyroscope Co. are streamlined since most films must be finished quickly to serve an immediate purpose. Here author K. H. Barney (left) and cameraman Frank Mehl line up a shot with the Cine-Special camera.

The Preparation Of Short Technical Films

By K. H. BARNEY

Speery Gyroscope Company

IN THE HIGHLY competitive field of electronic development there is quite frequently a need for motion picture films to be used in engineering or sales presentations to the customer. Often there is insufficient time for a full-scale motion picture production, yet the dynamic quality of a moving picture is required to stimulate customer interest in the product. This is especially true when the subject involved is a radar or similar system where the appearance of the various cathode ray tube presentations can be more realistically depicted by moving pictures than by slides or other still photographs.

We have found that short 16mm black-and-white films can be quickly produced at low cost to fulfill this need. In most cases it has proven convenient to make two copies of each film. One is a silent version designed for extemporaneous commentary by the engineer or salesman involved on the project. This is used in presentations away from the plant at locations where only 16mm silent projectors are usually available. The second copy (identical to the first) is printed on sound film stock and furnished with a magnetic sound track. The commentary is magnetically recorded on this version using a magnetic sound projector. This print can then be used for presentations at the plant or at other locations where magnetic sound equipment is available. This provides a sound-on-film version for use when the persons intimately acquainted with the film are not present. If necessary this latter version may be converted to optical sound-on-film at a later date.

The techniques used in producing these films are quite streamlined, since the films must often be finished in a very short period of time to be of most value. Consequently, the production is conceived and the script is written in terms of the materials that are actually on hand or may easily be obtained. After the preliminary planning of the script the narration is written in full for use with the magnetic sound edition. The reading of the narration by the person who will give the presentation is timed. This timing is then used for planning the lengths of the individual scenes in the film. Although the extemporaneous "off the cuff" commentary with the silent version is rarely as detailed as the magnetically recorded version (unless, of course, the narration is memorized word by word), it is usually delivered more slowly by the speaker. These two factors compensate for each other so that with a little practice anyone familiar with the material can talk along quite adequately with the silent version of the film.

Maximum use is made of the existing originals of diagrams, pictorial drawings, and photographs that may have been previously prepared for printed reports or brochures. The sequences and "action" of the non-live scenes are planned so that no frame-by-frame ani-



FIG. 1—A simple drawing which was used to produce a complete sequence by panning the camera from area A to B to C as narration told the story.

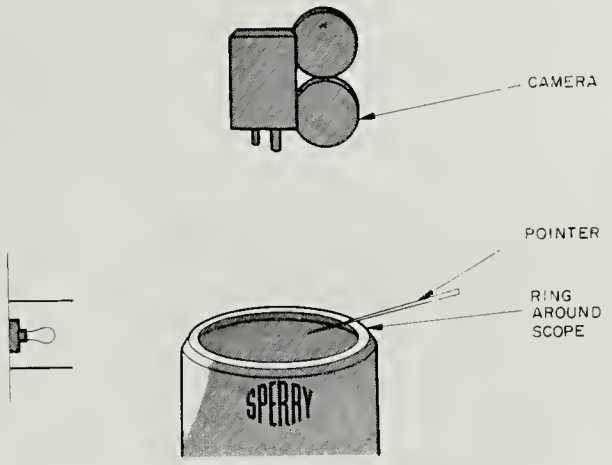


FIG. 2—LIGHTING and camera setup for photographing PPI (Plan Position Indicator) shots such as one shown in Fig. 3, at right.



FIG.3—TRI-X film is used in photographing PPI shots such as this. Sensitivity of this film enhances realism of radar presentation.

mation is required. By the use of closeups, pans, lap-dissolves, fades and a little ingenuity a great deal of "animation" may be obtained from inanimate drawings. For example, in a recent film it was necessary to depict the radar detection of a bomber flying toward the coast of a country. The drawing, Fig. 1, originally prepared for a company brochure, was used to depict the entire sequence. First the bomber alone was shown close up (Area A). The camera then panned slowly across the upper part of the diagram stopping on a closeup of the radar tower (Area B). A lap-dissolve to the radar operator and his presentation (Area C) completed the sequence.

Any new drawings such as circuit or block diagrams required especially for the film are made up according to the specifications for slides. Here simplicity is necessary. Every attempt is made to make the drawings as uncluttered and uncomplicated as possible. We have found it convenient to prepare these drawings in the size that is normally used for making slides. This standardization has proven satisfactory and permits the art work to progress from sketches through its completed form with a minimum of complication and supervision.

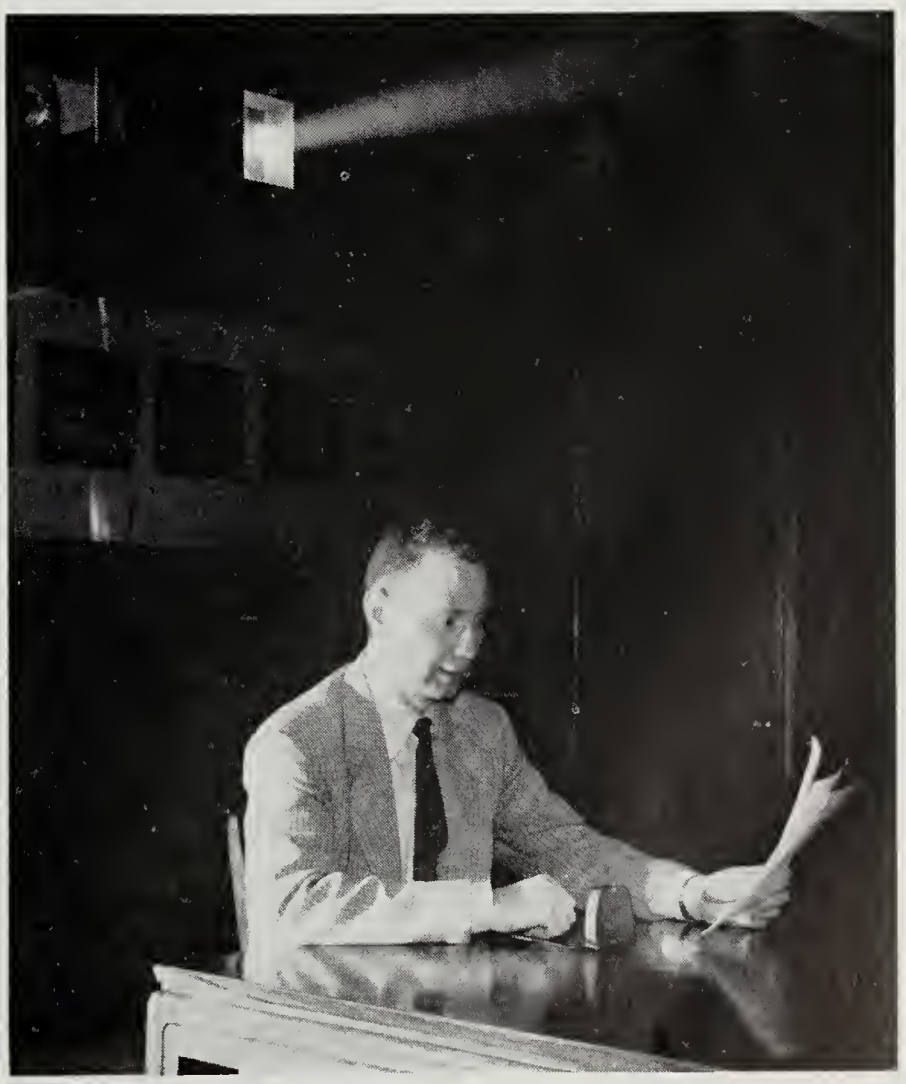
In filming block diagrams or schematics simple effects are used to focus attention of the audience on the part of the diagram being described by the narrator without the use of frame-by-frame animation. For example, a block diagram can be shown first in its entirety. As the narration proceeds, the part to be explained in detail is indicated by means of a pointer. This is followed by a closeup of the area being treated, whose salient features can be further highlighted by a pointer. The action of the pointer must, of course, correspond to the timing of the timed narrative. The pointer also conveniently serves to cue the extemporaneous narration.

As before, the selection of the scenes involving diagrams and their timing are governed by the same considerations that pertain to preparing a lecture with slides. Special care is taken to make sure that the information on each diagram can be fully understood by the viewing audience in the time allotted.

It has been found most expedient to film all titles and diagrams in their final order to cut editing time to a minimum. Fades and lap-dissolves are done in the camera. All pictures are shot at sound speed (24 f.p.s.) except where special effects are required.

Live action shots, whether interiors or exteriors, are usually photographed on Eastman Tri-X negative. The high speed of this film (A.S.A. 200-250) permits many interior scenes to be filmed without the use of special lights; the existing lighting level in the laboratories or office areas is usually sufficient. The sensitivity of this film also enhances the realism of radar presentation pictures. This is especially true in the case of Plan Position Indicator presentations, such as the one shown in Fig. 3, or other intensity-modulated presentations where the images fade very quickly to low levels of light output between scans.

(Continued on Page 118)



USING A Bell & Howell "202" magnetic recording projector, narration for Speery technical films are recorded in this sound-proofed room.



FILMING A SCENE for "The Fall of the House of Usher." A severe gray coffin occupies center of virtually empty room. Walls are shrouded in deep brown drapery. The polished wooden floor is bare. Against this, Tullio Pellegrini and Sal Pizzo enact scene being photographed by author.



BURNING of the Usher mansion—example of the fine miniature work that marks the production produced by Sal and Nadine Pizzo.



MOTTLED and moisture-streaked gray stone walls of dungeon are illuminated by blue light which casts bars of shadow upon the stone floor.

The Drama Of Color In Cinematography

How its psychological implications were employed to give dramatic emphasis to "The Fall of the House of Usher," photographed in 16mm Kodachrome.

By NADINE PIZZO

A DISCUSSION OF COLOR as a functional, emotion-rousing ingredient in the motion picture is rendered more graphic by explicit demonstration. Having established certain basic considerations and procedures governing the dramatic usage of color, it will be well to illustrate by citing their specific application in a picture of a dramatic character. I will proceed with an analysis of a production upon which I worked as co-producer—"The Fall of the House of Usher."

The mood of the famous Edgar Allan Poe story is of such a quality and intensity as to linger in the memory for long years after the details of the story have been forgotten by the reader. To attempt the filming of this vehicle is, therefore, to attempt to translate mood into pictures, the intangible into the relatively tangible form of the visual. The mood is one of deep melancholy, lurking mystery, and hovering doom. Though this is a tale of mystery, it is no mere horror story. It is a subtle psychological study of the mental dissolution of a man who is overwhelmed by fear and the sense of impending

(Continued on Page 110)



ALTHOUGH dark brown wall hangings were liberally used in this setting of bedroom, wall areas of gray stone are purposely left uncovered to enhance medieval character.

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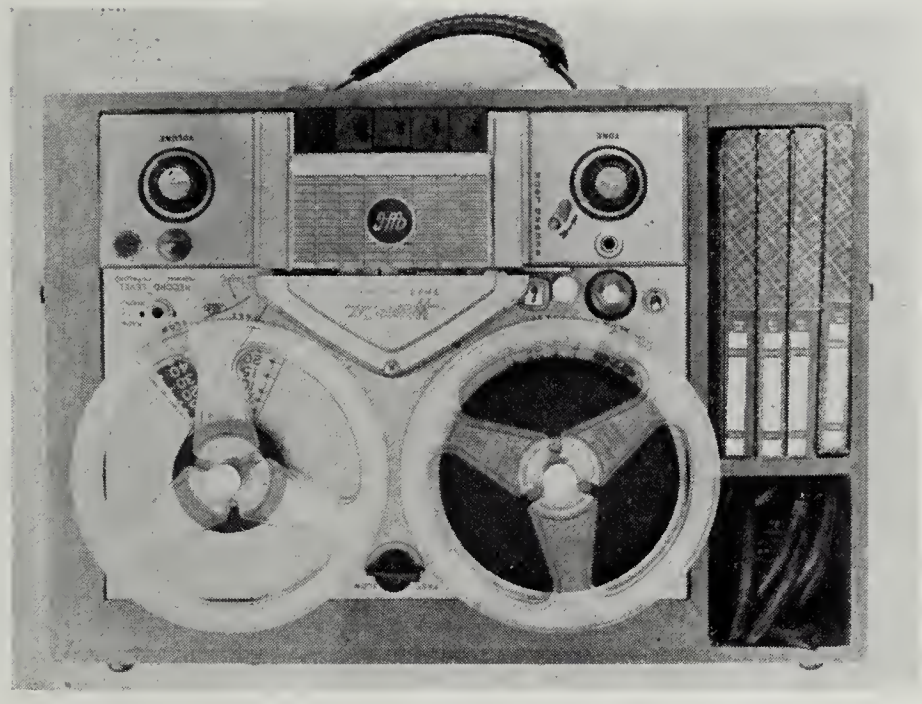


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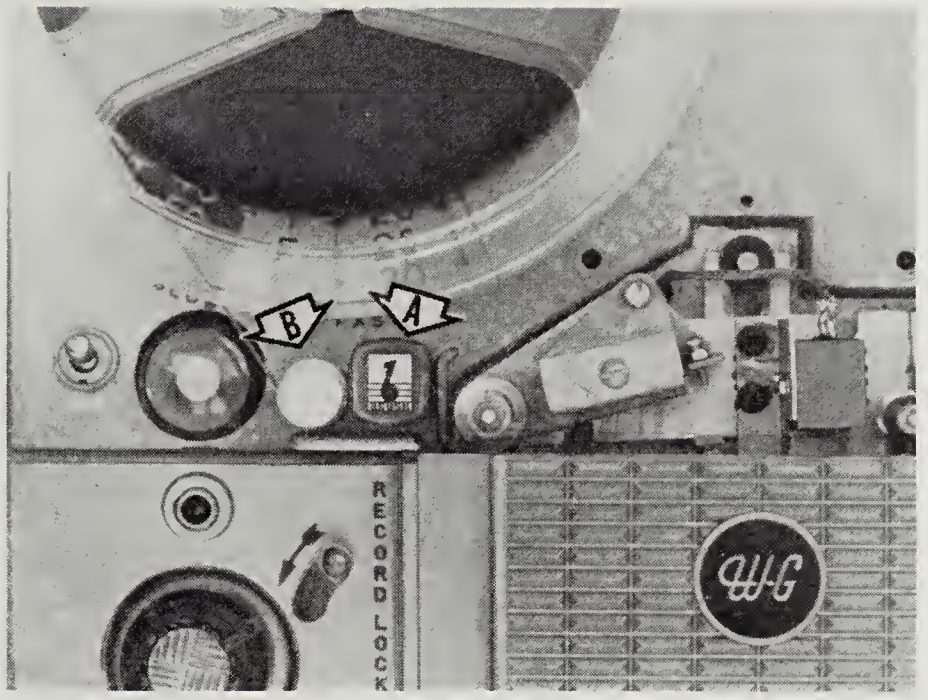


FIG. 1—A standard tape recorder to which an auxiliary synchronizing head has been added is shown above. Photo at right is closer view, showing relative positions of the synchronizing head "A" and the normal recording mechanism. A tape guide "B" was added to smooth out the flow of tape.

Coincident Sound For Home Movies

A unique system that insures perfect sync between any projector and magnetic tape recorder.

By JAMES N. WHITAKER

Technical Staff, Hughes Aircraft Company

THE SERIOUS movie-maker soon graduates from "shooting" movies and splicing them end-to-end. He edits his films to form logical sequences and later adds written titles or captions to explain the actions not fully clear to the audience. Not completely satisfied with silent projection, the next step usually is the addition of a musical background with the selections carefully arranged to fit the mood of the picture.

One method for the addition of mood music, which is still quite popular, involves the use of standard phonograph records and dual turntables, with the operator changing records in accordance with a carefully prepared score. The operator must follow the film closely and execute the changes in music smoothly and at the appropriate moment in order to provide an enjoyable show. This system requires considerable practice and concentration on the part of the operator and leaves much to be desired, particularly since it does not readily lend itself to the inclusion of sound effects and dialogue.

Several other methods have been used to provide sound with film. The most popular commercial system involves recording the sound separately, and then transferring it to a sound track on a master negative, the master negative and final sound track being the result of a considerable amount of selective editing.

(Continued on Page 105)

THERE'S no pleasure for a home movie maker like that that comes from an audience genuinely pleased with his accomplishment. Sound, expertly integrated and synchronized will do more than anything else to raise the quality level of 8mm and 16mm home movie films. Author Whitaker's system makes this a simple process.

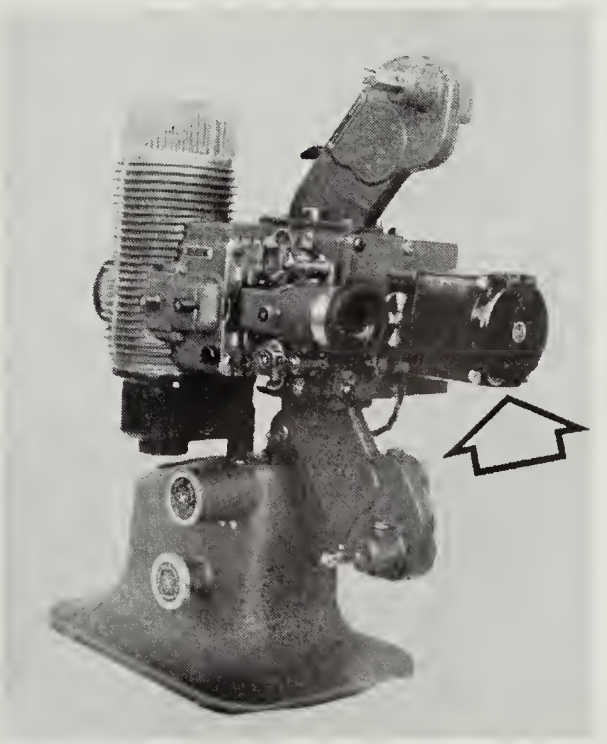


FIG. 2—Arrow indicates synchronous motor mounted on a Bell & Howell "Diplomat" 16mm silent projector.

Roster

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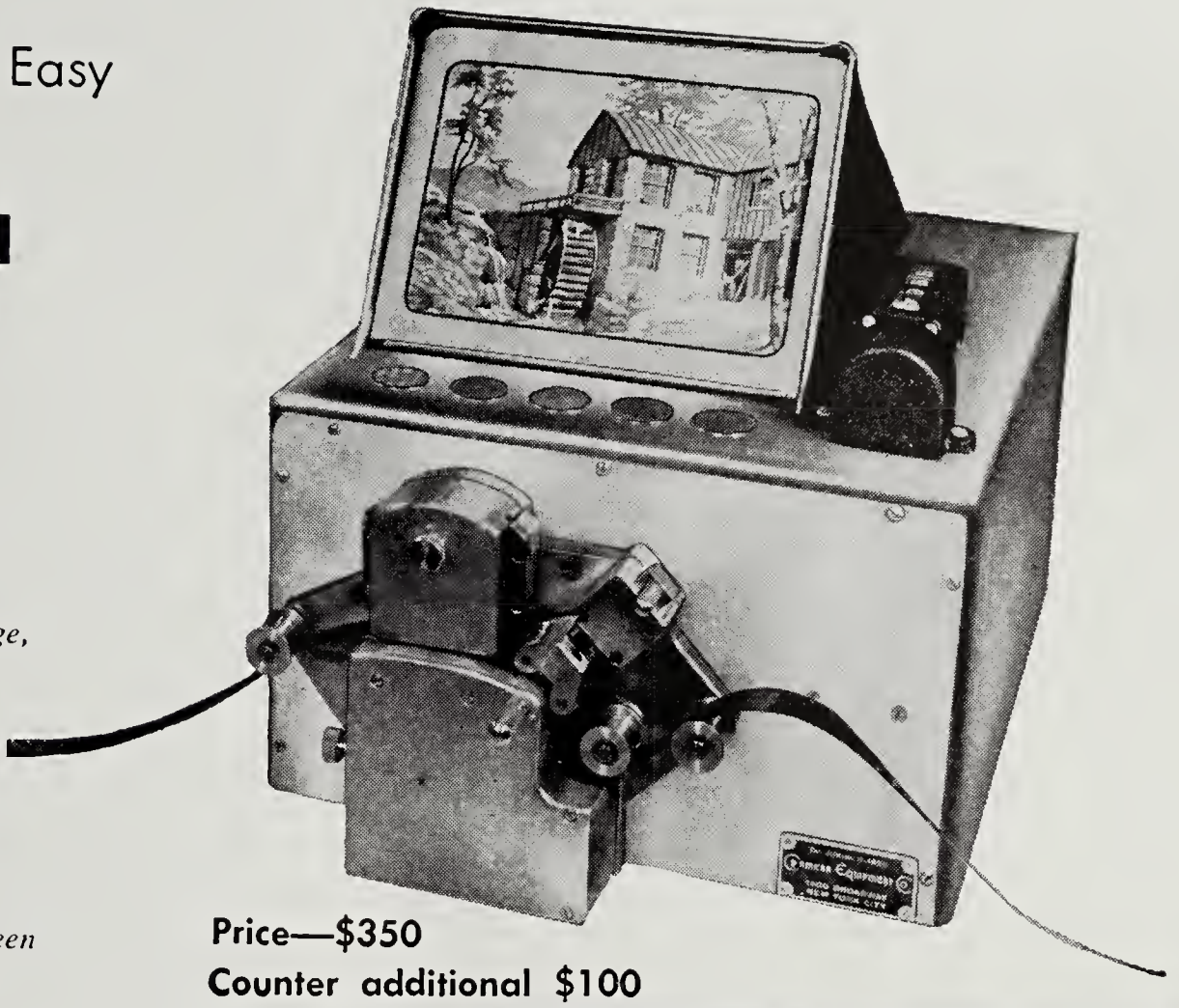
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COINCIDENT SOUND

(Continued from Page 103)

This method is not practical for certain professional and advertising work or for amateur uses because of the expense, complicated processes, and time involved in the various steps required in the ultimate production of a finished film.

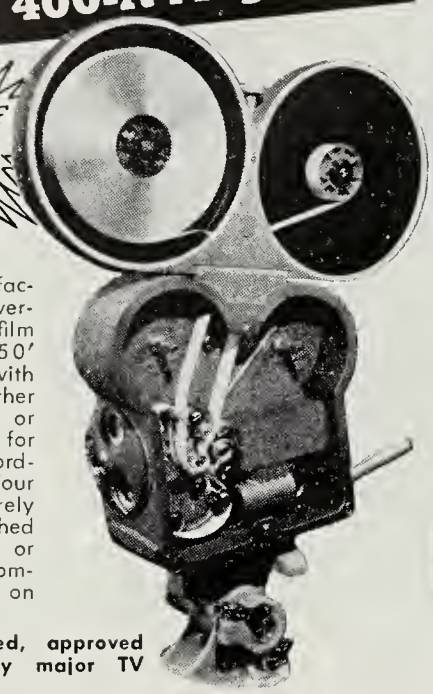
Another popular method involves recording the sound directly on the film at the time of the initial exposure. This system requires the use of special sound cameras and amplifying equipment which is both cumbersome and costly. In instances where 16mm film is used, it also involves running the film at a frame speed of 24 per second compared to the normal so-called "silent" film speed of 16 frames per second commonly used in connection with 16mm or 8mm amateur motion picture work. Even at the 24-frame film speed, the quality of the reproduced sound is not too satisfactory because of the relatively low linear speed of the film. Another disadvantage to single-system sound-on-film recording is that the sound is displaced a considerable distance along the film with respect to the photographic image. This introduces problems in editing since an undesirable portion of the film may include

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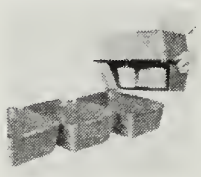
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a desirable portion of the sound track.

With the availability of tape recorders in the popular-priced field. some enthusiasts have recorded the entire program on tape to free the operator from the problem of changing records every few moments. This system requires a stroboscope and a strobe light on the projector in order that the film speed may be closely regulated. Since the speed of most tape recorders is relatively constant. a careful operator may produce quite satisfactory results for relatively short films with this system. providing he keeps an eye on the stroboscope and a hand on the speed control of the projector at all times.

Synchronous motor drives applied to both the film projector and tape recorder can only partially solve the problem because of tape "creep." Even with the most expensive recorders, an accuracy of better than ten seconds in one hour of continuous operation cannot be relied upon, and an error of ten seconds in coincidence between the optical image and the sound could not be tolerated, even for musical background alone. and would be out of the question for sound effects and dialogue.

In some commercial applications a special magnetic recording mechanism incorporating a perforated tape and sprocket system is used to assure coincidence. Here again, special equipment of an expensive nature is involved.

Another system which is more practical for the hobbyist involves the use of a standard projector and a special magnetic tape with a striped plastic base, so oriented that the flashes of light from the projector film gate will strike the striped tape, producing a stroboscope effect which enables the operator to adjust the speed of the projector to coincide with the movement of the magnetic tape. The major disadvantage of this system is that the operator must continually watch the tape and adjust the speed of the projector to compensate for the variations in power line voltage, tape creep, and other irregularities which tend to change the speed of the projector. the tape. or both.

In order to include the obvious advantages of tape recording as the sound source for home movies. and to retain the economy of the 16 frame film speed. the author embarked on a development program with an absolute lock-in between the linear speeds of the tape and motion picture film as the ultimate goal. Now that the problem has been solved. the answer seems obvious. although the development work covered a period of more than five years with all sorts of mechanical and electrical servo-mechanisms and controls devised and discarded for one reason or another.

The final system which will be described in the following paragraphs overcomes the major objections of previous arrangements. It provides for a sound track capable of maintaining coincidence with the optical track, incorporates the means for producing any desired degree of fidelity of sound reproduction, does not require the constant vigilance of the operator to maintain coincidence, permits the use of a standard motion picture camera operating at a film speed of 16 frames per second for photographing the original optical track. provides for post recording of the sound track, is so simple in its operation that even a novice may obtain satisfactory results, and involves a minimum of auxiliary equipment and expense.

Unless "lip sync" is required, no auxiliary or modified equipment need be used in connection with the original photography. This removes one major objection encountered in the use of sound-on-film recording. The extra equipment required for projection is little more than that available with an existing magnetic tape recorder and motion picture projector.

A simple modification of the tape recorder, the addition of a synchronous motor to control the speed of the projector and an amplifier system for driving the synchronous motor from the output of a tape recorder head. will convert a silent projection system to a coincident sound system.

Most popular tape recorders are what is commonly known as "half track" recorders. They record a magnetic image on one half of the tape. The tape is normally removed from the machine. turned over. and again run through the tape recorder to make use of the other half of the tape.

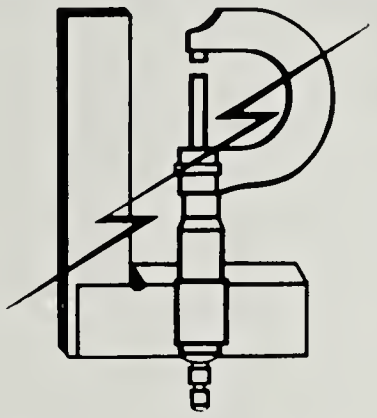
In the system described here, a standard tape recorder normally providing for half-track recording is fitted with an auxiliary recording head so positioned that it will record on the unused half of the tape. Saturation of the tape is accomplished by the direct application of 6.3 volts of a-c from the amplifier cathode heater supply system. Previous erasure is not required since the saturation of the tape automatically erases any previous recording.

A small synchronous motor is mounted on the projector in such a manner as to control the speed of the projector. This motor is driven from the amplified synchronizing tone recorded on the tape during playback. and from the power line during the recording procedure.

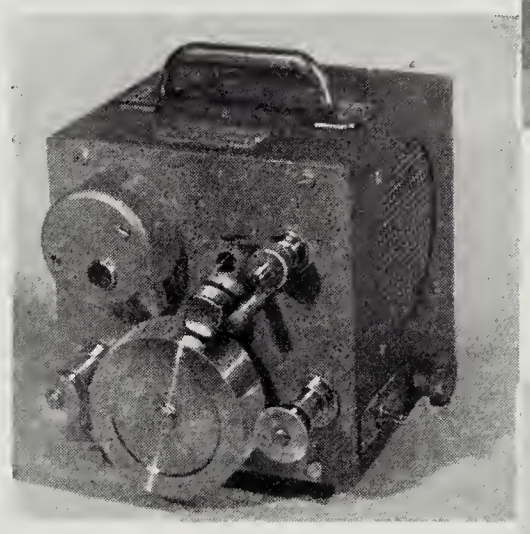
To set up a sound track for a film, the operator places the film in the projector in the usual manner. A mark is placed on the film leader at a pre-determined point. The projector speed control is adjusted to a value which has previously been determined to be the optimum set-

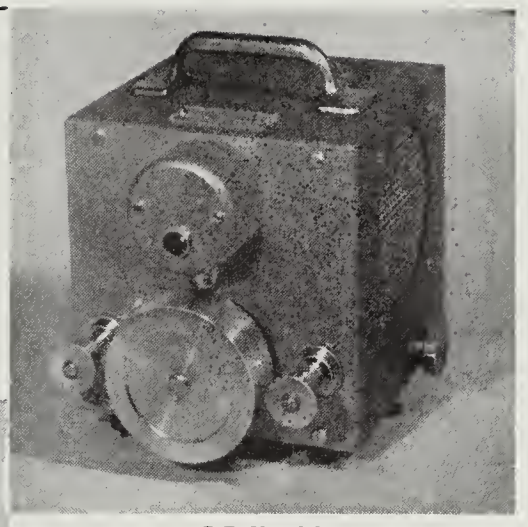
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ting to permit reliable speed control by the synchronous motor.

When the projector is turned on the synchronous motor locks the projector in step with the power line frequency. As the mark on the film leader passes a pre-determined point, the tape recorder mechanism is switched on. As the film progresses, commentary, background music, or sound effects are recorded on the normal track of the magnetic tape by speaking into microphone or by operating the phonograph. By watching the film and manipulating the phonograph and microphone, the operator may cause the desired sound to occur at a time coincident with the action portrayed by the film. Simultaneously, a 60-cycle synchronizing tone is recorded on the other track of the magnetic tape by the auxiliary recording head. This one will later control the speed of the projector during playback, as will be described further on. Other means may be used for producing and introducing the sound effects. for example: other tape recorders, dual phonographs, etc., may be used, the outputs of which would be connected to the recording amplifier, or mixing circuits may be included in the recording amplifier to permit the simultaneous recording of commentary and music or sound effects.

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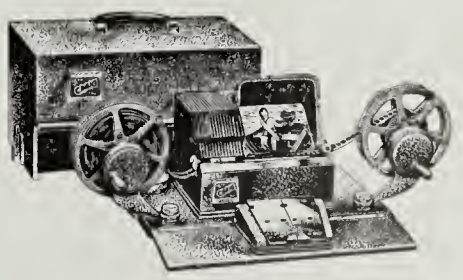
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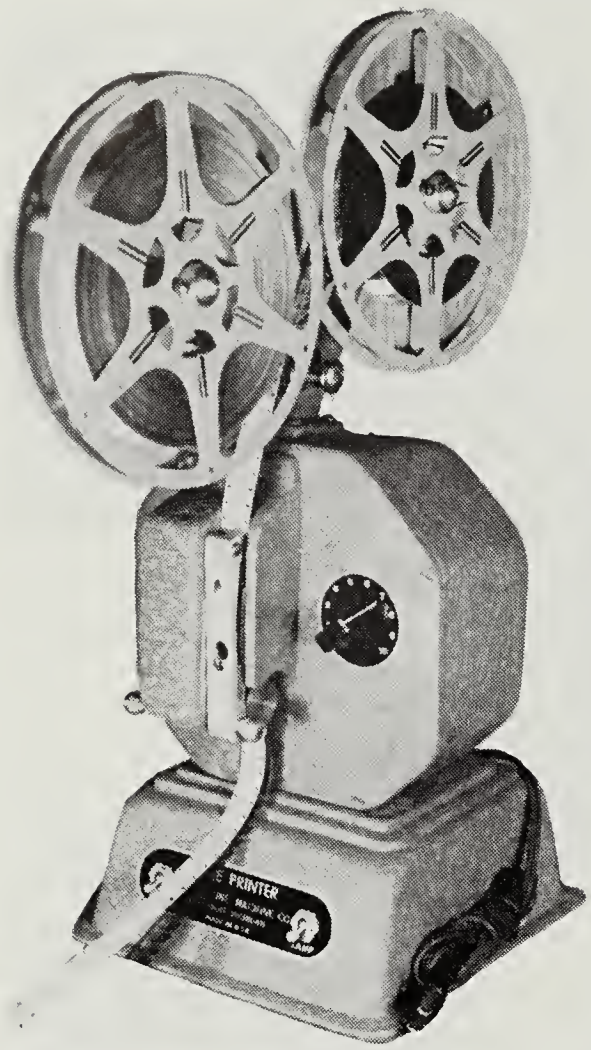
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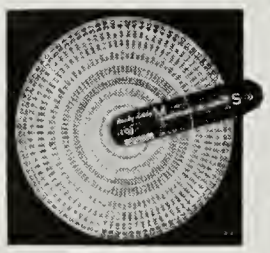
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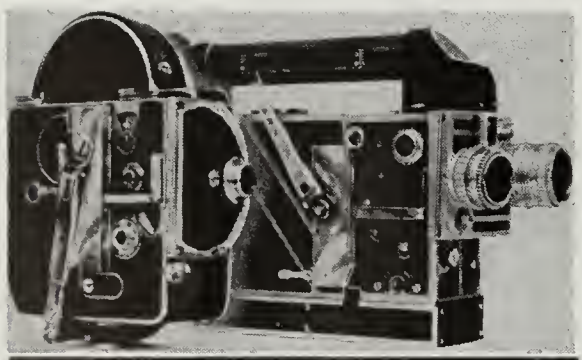


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through the film gate and sprockets of the projector in the usual manner. The power for the drive motor and for the projection lamp is obtained from the power lines. Power for the synchronous motor is provided by the synchronizing tone amplifier. The magnetic tape is placed in the tape recorder as is customary, with the starting point coincident with the start of the recording. This point may be indicated in any satisfactory way, such as by a mark on the tape, etc. The projector is switched on, and when the mark on the film leader passes the previously pre-determined point, the tape recorder is started.

The tape recorder mechanism is substantially instantaneous in starting. The synchronizing tone which was previously recorded on the second track of the magnetic tape produces an electrical output wave in the auxiliary recording head. This electrical wave is applied to the synchronizing amplifier which amplifies the synchronizing tone to a level sufficient to drive the synchronous motor, which in turn controls the speed of the projector through a mechanical linkage.

Simultaneously, the normal sound output from the tape is amplified and applied to the speaker system where the electrical wave is converted into audible sound.

Since the speed of the projector was controlled by the power line frequency when the sound was recorded, and since the power line frequency was recorded simultaneously with the recording of the sound, and since the power line frequency recorded on the tape is used to control the speed of the projector during playback, it follows that if the tape mechanism is started at the proper time relative to the position of the motion picture film, the sound will always be reproduced coincident with the action portrayed by the film, to the same degree as it was coincident when recorded.

Thus we have a means by which sound may be added to a silent motion picture screening in a manner independent of the type of film used, film speed or tape speed, and with the only requirement being that the same relative speeds be used in playback as were used in recording. For instance, a tape speed of 3.75, 7.5, or 15 inches per second may be used with equal results insofar as synchronization of the film and sound are concerned. The choice being one of preference or convenience only. Likewise 8mm, 16mm, or 35mm film may be used at any standard frame speed with equally accurate coincidence between sound and picture.

Since the speed of the projector is controlled by a synchronous motor whose power is derived from a tone recorded on the tape, reasonable variations in tape speeds will not disturbe the coincidence between the photographic image and the sound as originally recorded. In actual practice, tape speed variations of sufficient magnitude to cause the sound to be completely unsatisfactory may be present without causing the synchronous motor to lose control of the projector speed.

The more advanced amateur or professional who wishes to have complete sound coincidence, including "lip sync" may obtain the desired result by driving the camera with a synchronous motor, using a tape recorder equipped with the auxiliary recording head to simultaneously record the sound and the power line frequency. The editing problem in this case is no greater than that encountered in commercial systems using separate sound recording devices. There is the added advantage of the possibility of high-fidelity recording, lower or "silent" film speed, and a minimum of expensive equipment.

The auxiliary recording head found most convenient for this purpose is the Brush Type BK 1090. This head has a high output and since it requires a single hole for mounting, may be conveniently located in any position which permits the normally unused half of the tape to pass over the pole face. An auxiliary tape guide may or may not be required. A typical installation is shown in Fig. 1. Tape recorders equipped for dual channel recording will require no modification. A low voltage 60-cycle a-c signal may be recorded in the second channel. During playback, the output from this second channel is applied to the input of the synchronizing amplifier, which in this instance may be any amplifier capable of providing an output of ten watts at 60 cps, to drive the synchronous motor.

Next month I shall describe how the synchronous motor is mounted on the projector and also give details of the construction and use of the synchronizing amplifier.

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PICTORIAL EMPHASIS

(Continued from Page 87)

The three production photos reproduced here reveal how this technique was applied to three different scenes. Interior scenes throughout the picture reveal a classic pattern of lighting that is not altogether new nor excelled by other cinematographers. Pinpointing of light has been employed very skillfully to give depth and pleasing eye appeal to scenes played in interior sets. Moreover, it is adroitly used to give dramatic emphasis to one player, when two are photographed in a closeup or two-shot. The player whose scene it is is brightly lit while the other is given less light or subdued in darkness altogether. In this way the dialogue is given emphasis and the dramatic situation is greatly enhanced; attention is concentrated on the players and there is nothing pictorially to divert audience attention.

Photography of exteriors is equally meticulous. Indeed, more than 90 per cent of the picture consists of exteriors; and these are marked with a photographic realism that makes a rock look like a rock, a weatherbeaten facade genuinely so, and a dull day really overcast.

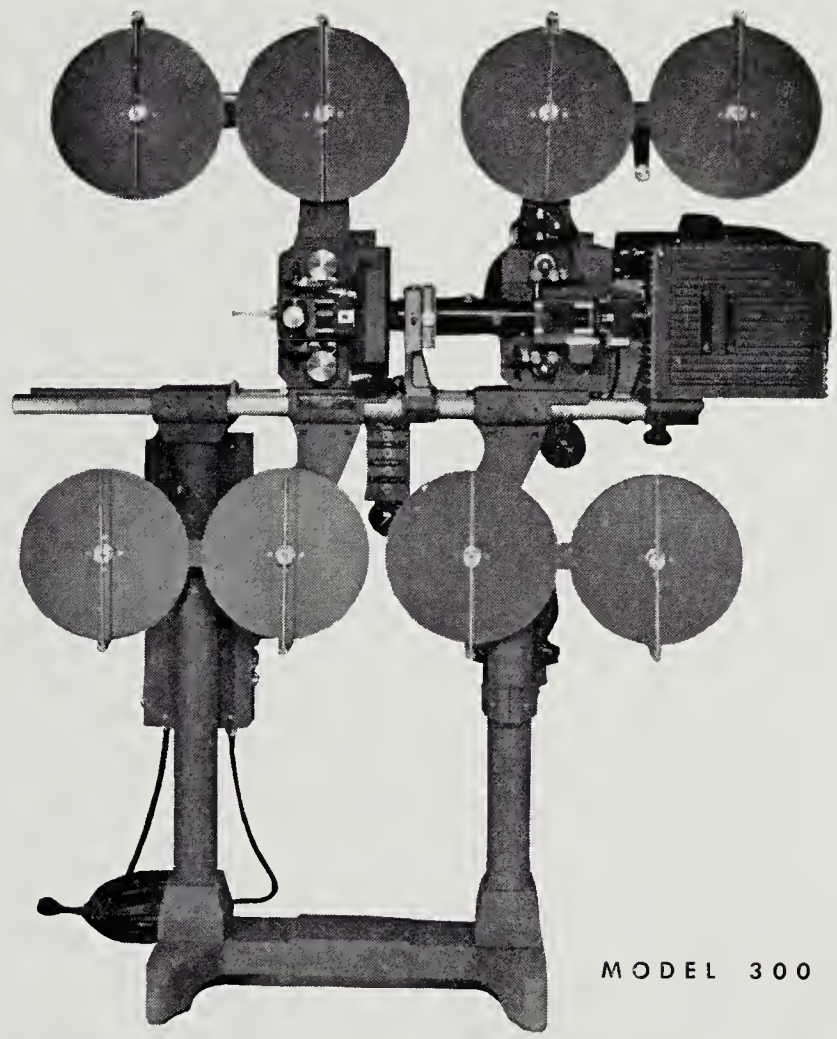
One standout scene is the hanging that takes place during a light rain in which the sky is heavy with ominous clouds—lending just the right pictorial touch to a violent scene. The scene was planned that way. The company waited four days for the weather to change, and the scene was shot at dusk to further enhance the somber pictorial aspect of the action.

The location exteriors were shot in the vicinity of Grand Junction, Colorado, over a period of twelve weeks during which time the company never missed a single day of shooting because of bad weather. The studio built a complete ranch set in a picturesque valley representing the famous "Rodick's Valley" described in the novel, "Jeremy Rodick," from which the screen play was adapted. Here Jeremy Rodick, played by James Cagney, bred and raised fine horses for Wells Fargo Express. Here Rodick held supreme as both rancher and the law—the nearest law-governed town being over 200 miles away. So as rustlers stole his horses and were caught, Rodick ruthlessly and swiftly applied his law—hanging from the nearest tree.

"Hanging fever" is the term his subordinates gave the sudden, strange impulse that gripped Rodick whenever he learned his horses had been stolen or killed by rustlers. And this vengeful mood is crystalized into dramatic action in the closing sequences of the picture when Rodick and his men come upon

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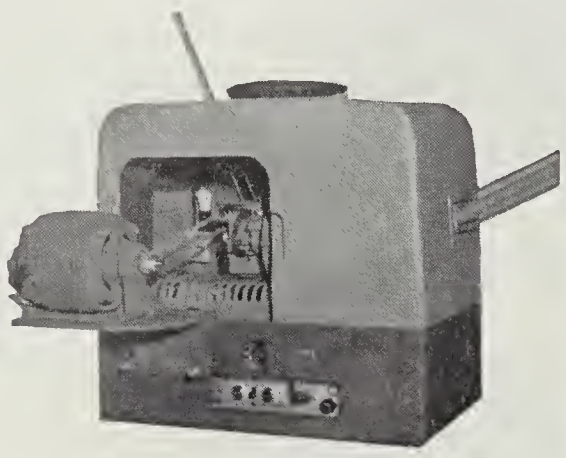
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three outlaws in the act of mutilating the hooves of a herd of his horses stolen during the night. His vengeance now knows no bounds. Instead of hanging the outlaws, he decides to inflict upon them the same suffering they are inflicting on his horses by trimming their hooves to the quick. Rodick orders the outlaws' hands tied behind their backs and their boots removed. For the first time he decides to turn outlaws over to a law enforcement agency—forcing the men to walk the entire 200 miles in their stocking feet.

Here Surtee's camera assumes a more important role in pointing up the torture the men endure as they walk slowly toward the distant town through sagebrush, cactus and rocks. The camera frequently moves in close to show the men's bleeding, blood-caked feet shuffling over sharp rocks, stumbling through a patch of cactus—driven relentlessly forward by Rodick and his men on horseback. Lens focus is deliberately crisp in these closeups to sharply etch details, as dictated by the stylized pattern of photography set for the picture. Here, more incisevly perhaps than in all the rest of the picture, pictorial emphasis has been applied with great skill to give these climactic scenes the utmost realism.

Pictorial emphasis in cinematography has been roughly defined as the art of utilizing all the potentials of photography to enhance a mood, a story or characterization; of making a scene visually more appetizing; of making the photography contribute something tangible and specific to the story besides merely recording it. "Tribute to a Bad Man" has all this. And a great tribute it is to two-time Academy Award winner Robert Surtees who photographed it.

THE DRAMA OF COLOR IN CINEMATOGRAPHY

(Continued from Page 100)

tragedy. All this is set forth in language of dark poetic beauty. Should the photoplay fail to establish and sustain the emotional essence of this vehicle, no amount of proficiency can save it from complete failure. This is one of Poe's group of stories properly categorized as "Tales of the Wierd and the Beautiful," and the production must be realized in these terms.

What, then, is the role of color in a picture of this type? Would this story not best lend itself to black-and-white? True, it is a superb black-and-white vehicle; but were this to be interpreted upon the stage it would be done with color. It is a misapprehension to believe that color is effective only when it can be used lavishly. It is no less eloquent in a low-key than in the higher registers. For emphasizing the mood of "Usher" it was one of the most potent means at our disposal.

The period of the story is set for the year 1839. It was in this year that the tale was written. It is ideal for our purpose from the costume standpoint, for at this time dress had evolved from the flamboyance of the earlier part of the century to the relative conservatism necessitated by our vehicle. Once the historical time is established for a production, you have a general framework within which to work in planning sets and costumes. In this particular case we had a wider range than the early 19th century, for the Usher mansion was very old and could well incorporate features from even earlier times.

The location of the gloomy mansion was a remote section of the country, presumably rural England. It stood in utter isolation in a desolate landscape. The model of the house which we designed and built was a gaunt, tragic symbol of decaying magnificence. It was deep gray in tone and mottled and weather-stained with age. The landscape setting was barren and dreary, and accented with the gray tortured skeletons of dead trees. The sky was moody gray. The outdoor sequence which must correspond in color quality to our model landscape was filmed in a setting that might conceivably border the Usher estate, and shot under a gray sky. As a matter of fact, it rained before we were done with that morning's shooting. Sky inserts which were used at strategic points in the picture had to echo the tragic tensions building during story's progression. We waited weeks for just the right weather conditions. Finally our patience was rewarded by a stormy day with leaden clouds and high wind. These skies were filmed as night scenes, and the dark, ominous blue-grays carry just the right mood quality.

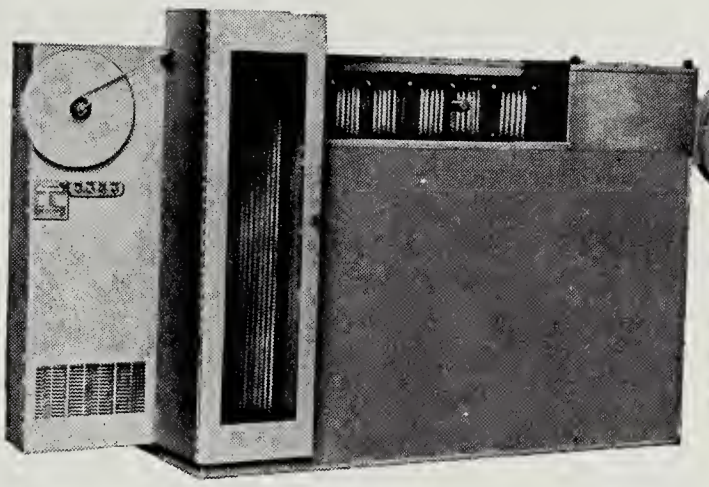
Our interiors, in which the story unfolds to its inevitable tragic climax, are restricted in number. Therefore, each set must carry a heavy burden in conveying the total impression of the character of this house. There must be an air of antiquity, which is conveyed by the barren gray stone work in certain interiors. There must be cheerlessness coupled with luxury. This was an old and wealthy family with an appreciation for the beautiful. Above all there must be a dark, brooding quality. For

the master color note dark brown was selected. In floor to ceiling drapery this dense brown covered most of the walls, providing a gloomy background for the richer color notes of other furnishings. With this background we were able to create the illusion of spaciousness which, in fact, we did not have. Also, the darkness of the backdrops contributed to the success of the chiaroscuro effects essential to the mood of the drama.

Now that an over-all unity has been established for the production's settings, let us examine individual sets for their variations within the master scheme. The settings for any given sequence must support the dramatic action and stress not only the individuality of the actors but their psychological developments. The basic set is Usher's studio, which reflects most intimately the man and his tastes. Against the gray and deep brown of the walls are placed the warmer browns of cabinets, tables and a partial room divider of intricately cut out oriental pattern. The dark blue upholstery of a carved chair, the deep gold of a small antique sofa, and the exquisite bas-relief of a Chinese screen in the color of old ivory establish the family taste for rich and exotic furnishings without in any way destroying the oppressive mood. The comparative sparseness of the furnishings contributes to the illusion of spaciousness. Usher is first seen against the fabulous carving of the ivory screen and thus immediately identified with his environment.

The painting sequence, filmed in an area of the studio room, is the most colorful in the picture, but this color is presented under extremely dramatic lighting. It recedes into shadow and leaps into brilliance. This scene not only portrays Usher in one of his most outwardly normal moods but, in showing him at his easel, further reveals his aesthetic nature and something of the strangeness of the inner man. The canvas on the easel with its insane reds and tortured tree forms, the lonely blues and unwholesome red-browns of the two canvases resting in dramatic contrast against a rich gold screen permit us a glimpse into a tortured soul. I will discuss the costumes in this sequence at a later point. This scene is strongly symbolic of the mental torment suppressed beneath the man's outer mask of quiet concentration.

The death bed sequence immediately follows a scene where the friend wanders restlessly about the richly furnished studio. The dramatic impact is even further heightened by this contrast. The sister's room is shadowy and completely shrowded in dark brown. The only furnishing is the bed, with a medium brown satin counterpane and rich brown satin side draperies. The girl's face, framed against a white pil-



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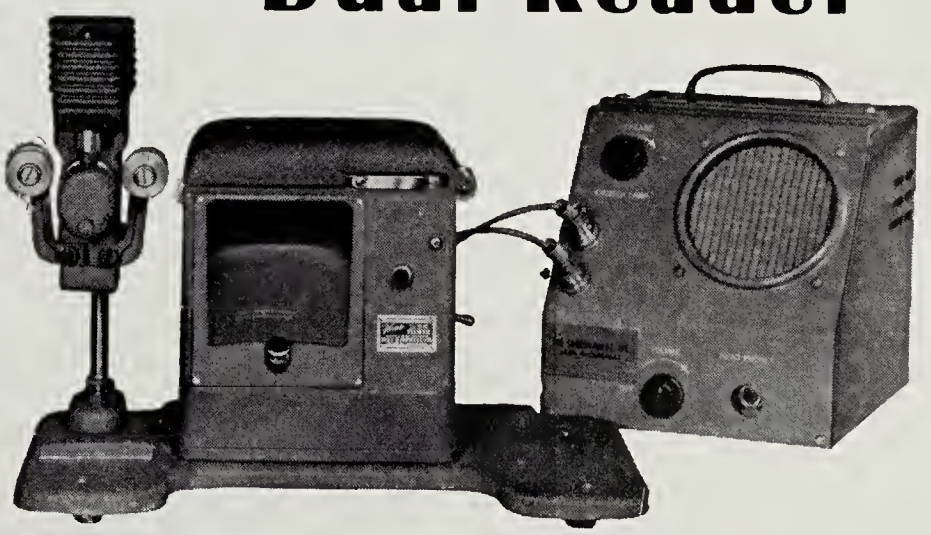
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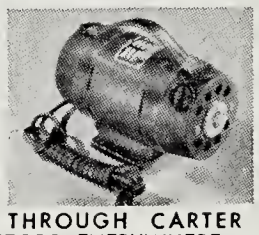
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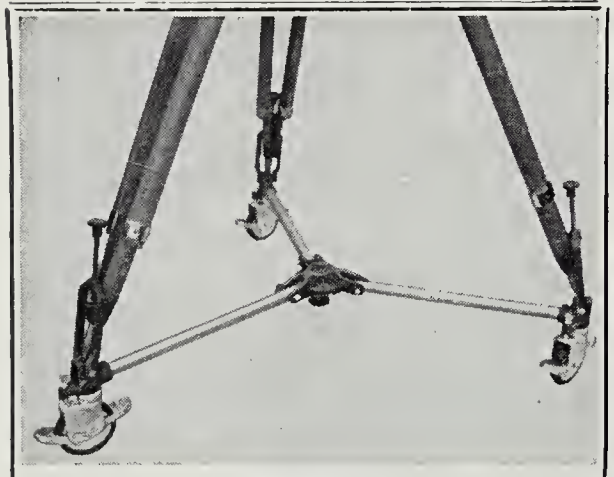
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low, with delicate blue lighting, becomes the focal point in a deeply morbid setting. There is not a distracting or superfluous color note in this scene; everything is aimed at a single overpowering impression of stark tragedy.

When Usher makes the announcement to his friend of his sister's death, he stands before a cold blue window. One side of his face catches illumination from the warm candle glow within the room, while the other side is dramatized symbolically with the blue of waning daylight that reaches him from the window. The effect is ghastly. The color supports and emphasizes the resolution of the man and the import of the words he speaks.

The room in which the coffin is set up before the burial is arranged so that the severe gray coffin occupies the center of a virtually empty stage. Again the walls are shrouded in deep brown drapery. The polished wooden floor is bare. Rich brown satin looped draperies frame the room like a proscenium arch on the camera side. Dead center and in the foreground is a bare table holding a candelabra with three tall burning tapers. The coffin rests upon a low stand covered with purple satin. The same purple which in "The Nativity" gave to one of the kings a regal splendor is here employed in a different relationship as a final tragic accent. When the coffin is removed, that purple cloth seen through the tall candles in a dark-walled area of emptiness conveys the ultimate loneliness.

The mottled and moisture-streaked gray stone walls of the passageway to the dungeon are illuminated by blue light which casts bars of shadow upon the stone floor as it filters through a grating. By the dungeon door is a burning torch which illuminates this area with warm light. The torch is carried into the stone-wall dungeon and casts upon this wierd burial scene a flickering amber light. Here is an instance where warm light is used to achieve an eerie effect.

The last interior setting in the drama is the friend's bedroom where the mounting tragedy reaches its final resolution. This room reveals the antiquity of the mansion. Though dark brown wall hangings are liberally used, the wall areas of bare gray stone that are purposely left uncovered give to the room a medieval character. The huge mass of a canopied antique Chinese bed fills one corner of the room. It half recedes into shadow, but the rich red glow of its intricately carved surfaces provide the one note of oppressive splendor in the uncompromising austerity of the chamber. The bed and one table near it are covered with deep violet satin. A small chair and commode complete the furnishings. The two tables support candles which are the sole light sources for the setting. A small medieval window looks out on the blackness of night. Gray-green drapery is used in the corner behind the bed to give a little definition to this unit in the shadowy room. Under normal illumination the monumental structure of the bed could dominate the room and dwarf the actors. By the chiaroscuro treatment it was held to its proper subordinate function. With these colors and color values, the dramatic spotting of simulated candle illumination from opposite sides of the room could be employed to ultimate dramatic advantage. Intense light and shadow contrast, with forms emerging from obscurity into highlight, yielded the full measure of mystery and tragic climax.

Flame is used as a dramatic color device throughout the picture. It ranges from the cheerful open fire in the friend's study, through candle and torch light, the the flaming frenzy of the final sequence. Here the color of fire intensifies until it becomes a blood-red leaping fury, symbolizing the devouring evil that consumes the doom-ridden House of Usher.

I trust that the above discussion of settings has clarified the interpretation of a given vehicle through the means of carefully selected color, and that it has demonstrated the development of individual sequences within the over-all mood requirements of the picture. To borrow a term from music, we may define this procedure as "variations on a theme"—color variations upon a master color theme.

Having analyzed color usage in settings, we are now free to consider its function in the second great category in which it is employed—costume. In the general introductory discussion of this subject I have stated the many factors to be understood and resolved in dealing with color in costuming. I'll not repeat them, but illustrate their application in the costumes of the three principal characters in "Usher."

The friend, who is primarily a spectator in this wierd tale, is a normal, socially adjusted human being. He serves as the dramatic foil for the abnormal intensity of Usher. To help establish his character and circumstances and to contrast him with Usher and Usher's morbid environment, he was dressed in light gray breeches and cool green double-breasted tail coat. The light gray has both elegance and freshness. The green is cool and soothing. It has normal, healthy connotations. The white shirt has a ruffled front and cuffs. The neckcloths are either white or navy blue and tied with flowing ends. After the sister's death, a black satin, severely knotted neckcloth is substituted. In the last sequence the

friend removes his coat to reveal a green striped waistcoat and white shirt with full gathered sleeves. This white further accentuates his final dramatic involvement in the plot and helps to spotlight him in the dark room. In the walk through the woods at the begnning of the film, a navy blue cape gave him definition in the gray landscape; in the flight sequence, the white shirt underlines his unthinking panic and dramatizes him in the night.

Usher's sister, the Lady Madeline, is garbed in the two most dramatically potent of all colors, actually not colors at all—black and white. Neither should be overlooked in a color production, for their power to dominate an entire color ensemble renders them invaluable. Both are difficult to illuminate. Black literally abhors light, and white reflects it to such a degree that at times it can "burn out." This should be no deterrent to their use, however, for careful and clever light manipulation can solve both problems. In her first appearance the Lady Madeline wears a gown of severe black taffeta. She instantly becomes the enigmatic embodiment of Usher's morbid obsessions, her appearance a foreshadowing of tragedy. She does not again fully appear until the final sequence of the picture when the door of the friend's bedroom slowly swings open to reveal her standing on the threshold in a flowing white shroud illuminated by icy blue light. One can well imagine the "shock" impact of this vision. She incorporates all the chilling horror of the tomb and the terror of night and the unknown.

When, after an ample period of suspense, Usher is first revealed, he is seen in a rich, cold blue dressing gown against the mellow golden carving of an antique screen. The luxury of settings and attire establish harmony between the man and his environment. Both reveal much of his circumstances and tastes. The blue, however, contrasts with the golden tones in such a way as to dramatize the figure. This blue is cold with a three-dimensional quality. The fabric is such that the color takes on a silver

(Continued on Page 116)

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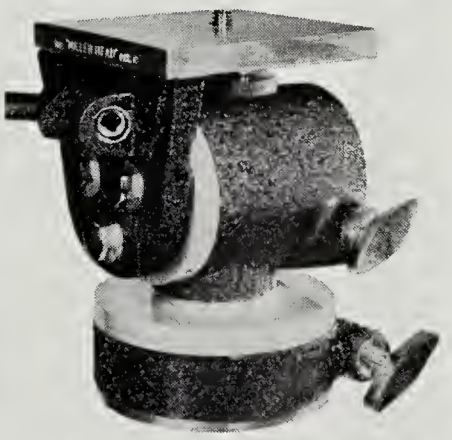
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● JOSEPH MACDONALD, "Hilda Crane," (CinemaScope; Color) with Guy Madison, Jean Simmons, Jeane Pierre Aumont, Peggy Knudsen. Philip Dunne, director.

● LUCIEN BALLARD, "The Proud Ones," (CinemaScope; Color) with Robert Ryan, Virginia Mayo, Jeff Hunter. Robert Webb, director.

UNIVERSAL-INTERNATIONAL

● RUSSELL METTY, "Written on the Wind," (Technicolor) with Rock Hudson, Lauren Bacall, Robert Stack. Douglas Sirk, director.

● IRVING GLASSBERG, "Johnny Salvo," with Ray Danton, Leigh Snowden, Grant Williams. Jack Arnold, Director.

● WILLIAM DANIELS, "The Gentle Web," (Technicolor) with Esther Williams, George Nader, Edward Andrews. Harry Keller, director.

● MAURY GERTSMAN, "Behind the High Wall," with Tom Tully, Sylvia Sidney and Betty Lynn. Abner Bieberman, director.

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● ROBERT BURNS, TOM TUTWILER, "The Spirit of St. Louis," with James Stewart. Billy Wilder, director.

● JOHN SEITZ, "Santiago," (Warnercolor; wide-screen) with Alan Ladd, Rossana Podesta, Lloyd Nolan. Gordon Douglas, director.

● BORIS KAUFMAN, "Baby Doll," (Wide-screen) with Karl Malden, Carroll Baker, Eli Wallach. Elia Kazan, producer-director.

INDEPENDENT

● GORDON AVIL, "Rebel in Town," (Bel-Air Prods.) with John Payne, Ruth Roman. J. Carrol Naish. Al Worker, director.

● SAM LEAVITT, "Count the Dead," (Nacirema Prods.) with Howard Duff, Gloria McGehee, Dick Foran. Lee Sholem, director.

● JAMES WONG HOWE, "Death of a Scoundrel," (Chas. Martin Prods.) with George Sanders, Yvonne de Carlo, Zsa Gabor, Nancy Gates. Charles Martin, director.

● JOSEPH BIROC, "Fragile Fox," (Associates & Aldrich Prods.) with Jack Palance, Eddie Albert, Lee Marvin, Robert Strauss. Robert Aldrich, producer-director.

● ELLIS W. CARTER, "Flight to Hong Kong," (Sabre Prods.) with Rory Calhoun, Dolores Donlon. Joseph Newman, producer-director.

● SAM LEAVITT, "Step Down to Terror," (Harmon Prods.) with Anthony Quinn, Carol Ohmart, Arthur Franz, Jay Robinson. Harry Horner, director.

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● GERT ANDERSON, "Ford Theatre," (Screen Gems).

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● ROBERT PITTACK, "Private Secretary," (Chertok).

● PHILIP TANNURA, "Burns & Allen Show," (McCadden).

● HARRY WILD, "Bob Cummings Show," (McCadden).

● JAMES VAN TREES, "The People's Choice," (McCadden).

GOLDWYN

- William Whitley, "Crossroads," (Federal TV).
- Norbert Brodine, "The Loretta Young Show," (Lewislow Films).
- George Clemens, "Schlitz Playhouse of Stars," (Meridian).

KTTV

- Kenneth Peach, "Fury," (TPA).

KLING

- Walter Strenge, "The Answer,' (Family Films).

MGM

- Harold Marzorati, "MGM Parade," (MGM).

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- Robert DeGrasse, "It's Always Jan," (Jannard) and "Make Room for Daddy," (Marterto).
- Harold Wellman, "Wyatt Earp," (616).

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- Lucien Andriot, "It's a Great Life," (Raydic) and "The Life of Riley," (Hal Roach).
- Lothrop Worth, "The Great Gildersleeve," (Hal Roach).

20TH-FOX

- Karl Struss, "My Friend Flicka,' (TCF-TV).
- Ed Du Par, "Crackup" (20th-Fox Hour) (TFC-TV).
- Lloyd Ahern, "In Times Like These," (20th-Fox Hour, TCF-TV).

WARNER BROTHERS

- Harold Stine, "Casablanca," (Warner Bros. TV).
- Carl Guthrie, "Cheyenne," and "Siege," (Warner Bros. TV).

MISCELLANEOUS

- Virgil Miller, "You Bet Your Life," (Filmcraft).
- Daniel B. Clark, "People Are Funny," (Guedel).
- Mack Stengler, "Liberace," (Guild).
- Sam Leavitt, "Knight of the South Seas," (Lovina Prod.).
- Henry Sharp, "Sheena, Queen of the Jungle," (Nassour).
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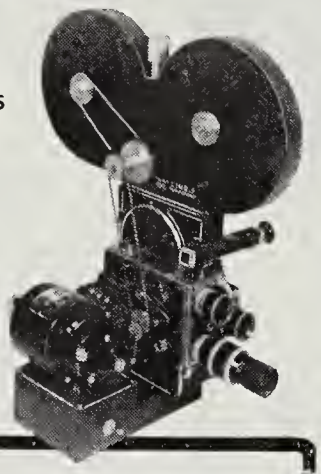
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THE DRAMA OF COLOR IN CINEMATOGRAPHY

(Continued from Page 113)

sheen in highlight and recedes into great depths in shadow. The emotional connotations of this blue are, in this setting, not tragic but melancholy. We must leave ourselves room for intensifying the tragic development of the character in subsequent scenes.

The red smoking jacket employed in the following sequences further develops the picture of informal elegance, of a semi-invalid gentleman in the seclusion of complete retirement. The deep red of the velvet jacket and the collar and cuff facings of ruby satin are dramatically potent. Combined with the dark gray breeches, the white shirt, and a severe black satin neckcloth, these reds produce an effect of conservative richness. As can readily be seen, the contrast with the friend's light gray and cool green are extreme. These two men are placed in sharp dramatic opposition. This is particularly vivid in the jewel-toned painting sequence.

After the sister's death Usher is dressed in a formal black frock coat. His first appearance in this garb is in a scene where his face is never shown —in the death bed sequence. Here he is a grim black figure amid the deep, smothered browns of a room of death. When, standing in utter isolation before the blue window, he announces the sister's decease to his friend, the severe black of his costume powerfully underlines the irrevocable tragic turn of the story. Usher becomes at that moment the personification of desolate loneliness and stark tragedy. Throughout the following sequences this black, relieved only by the touch of white at neck and wrists, emphasizes the man's complete divorcement from reality. He is clothed in secrecy.

Not until the final sequence in the drama does he reappear in the blue dressing gown. This indicates a time lapse, a partial relaxation in privacy of the frozen constraint of the man in the presence of his friend, and the intention, though evident inability, to retire for the night. Most of all, this blue provides a color with high dramatic potentialities for the chiaroscuro treatment and the emotional range of the final scenes. The man's inner tension explodes into the horror and panic of hallucination, subsides into a numbed, silent awareness of what transpires within the dungeon tomb, then rises on a note of terror that has the penetrating impact of a scream; then the swift violence of death. The particular blue with which we worked was versatile enough to support and emphasize this full range of mood and emotion.

In a sense I regard "Usher" as a fortunate choice for demonstrating the value of color in a motion picture. What would be obvious in a colorful production can be the more eloquently illustrated through the refined usages required by a so-called black-and-white vehicle. The story-telling qualities alone can justify the use of color. It is invaluable in establishing time, locale, and material circumstances; in clarifying story progression; in analyzing, developing and contrasting character. Its psychological implications have infinite scope. Its visual persuasiveness render it an irresistible means of communication. Color is the most stimulating factor in visual experience. It is that potent force which supports and strengthens the other essenital elements, and thus renders the motion picture a complete medium for creative expression. It imparts vividness to the final emotional impact and intensifies the "flavor" or mood impression so that it will linger within the memory of the viewer long after the production has had its brief period of life upon the screen.

PREPARING THE SCRIPT

(Continued from Page 96)

progressively higher than the last. Between each of the peaks there is a lull or temporary letdown in dramatic intensity. These lulls are necessary in order to give the audience a chance to "catch its breath," psychologically speaking. They also provide "light and shade" in the changing pattern of the story.

The ending of the screen story also requires special script-writing attention. It is here that all loose ends of the narrative are tied securely together and formed into a final resolution. The audience should not be left hanging in the air—rather, it should experience a feeling of satisfaction and finality at the conclusion of the film. Once the ending of the story has been initiated, the story should move steadily forward to the final fadeout, and not pause to go off on tangents or involved explanations.

The basic element of the dramatic screenplay is conflict. Without a certain opposition of characters and elements there con be no drama. In other types of films, comparison and contrast may take the place of conflict in the dramatic film. But it is a proven fact that an audience will soon tire of a screen story that runs too smoothly.

Another factor of prime importance in script writing is motivation. An audience requires a reason or explanation for everything that happens on the screen. It wants to know *why* a character acts the way he does. There must be a logical reason behind every action. The efficient script-writer makes these explanations logically during the exposition of the story.

Reaction shots play a big part in story motivation. These are quick cuts, in closeups, to others in the cast showing their reaction to whatever situation is taking place. Reaction shots stimulate human interest and bring the audience closer to the story. The audience will tend to react in the same way as does the character shown in the film and will more nearly feel the impact of the screen situation.

Parallel action is a constructive cinematic device which indicates several phases of action taking place at the same time, and is accomplished by repeated cutting back and forth from one situation to the other—first in the script and later at the editing table. When skillfully handled, parallel action is very effective in building suspense.

The most important thing the script-writer has to learn in attempting dramatic construction is what to leave out. Anything that does not contribute to the atmosphere, mood, or action of the story should be deleted. Cut out the deadwood that clutters up the first draft of the script and the salient facts will stand out much more effectively.

In planning the individual scenes of the script, variety in "point of view" is essential. By point of view we mean camera angle and image size, both of which are motivated by the subject matter of the scene. There should always be a reason why a certain angle or composition is used; a shot should never be just thrown into the script.

Scene composition depends upon the placement of the camera in relation to the elements within the scene, and while this is quite commonly thought of as a function of the director of photography, some thought toward composition should precede the description of the scene in the script and be briefly detailed. What the cinematographer can do to improve upon it later, when the scene is being shot, is something else again.

It should be remembered that the audience sees only as much of a situation as the camera shows. For this reason, the general locale should be well established at the beginning of the story so that the audience may remain reasonably orientated as the rest of the story unfolds on the screen.

Image size is a relative term. Obviously a closeup of a grain of wheat would be executed differently than a closeup of a person or a structure, or other individual object. For this reason, image size can be described only in rather general terms.

In the following paragraphs other important descriptive terms used in script writing and film production will be analyzed and their place in the script described.

The big closeup (sometimes referred to as an insert—although there are other types of inserts) is a very large closeup of an object that completely fills the screen. When the subject is a player's face, the frame cuts at the chin and at at top of the head, and may even show just a portion of the face, such as the eyes or mouth. This is a highly dramatic shot when properly used.

A closeup is a conventional shot cutting from the top of the shoulders to a few inches above the head when the subject is a person. Actually the closeup is the most emphatic of all shots. It focuses attention down to a sharp point and should be used where some small action or expression is to be pointed up dramatically.

The two-shot, as the term suggests, is used to show two people together in a scene and rather close up. The frame cuts them about from the level of the elbows to a few inches above the head. The medium shot is used to show people or objects from a medium distance and giving some idea of the background also. It is about right for scenes showing three people together, cutting them about at the knee. Medium shots should be alternated with long shots and closeups.

The long-shot, sometimes called the full-shot may mean anything from an overall view of a group of people to a panoramic shot of vast areas of terrain with great masses of people, animals etc.

Obviously, there are many other types of shots falling between those described above, but these are the most important standard shots, and they can be easily varied.

We shall not go into great detail here regarding the actual format of the motion picture script, as the form varies with the type of film that is to be made. A few general pointers, however, may prove helpful.

Each individual scene should be numbered, and the heading should include such information as the locale, whether the scene is an interior or exterior, the time of day, image size and angle, and any other technical data that will be helpful to the director and the cameraman—as for example:

"Scene 29: Interior mountain cabin —Night—

Medium shot—Shooting toward fireplace." The action is then described in detail, with all camera directions set off in capital letters. If it is a direct sound

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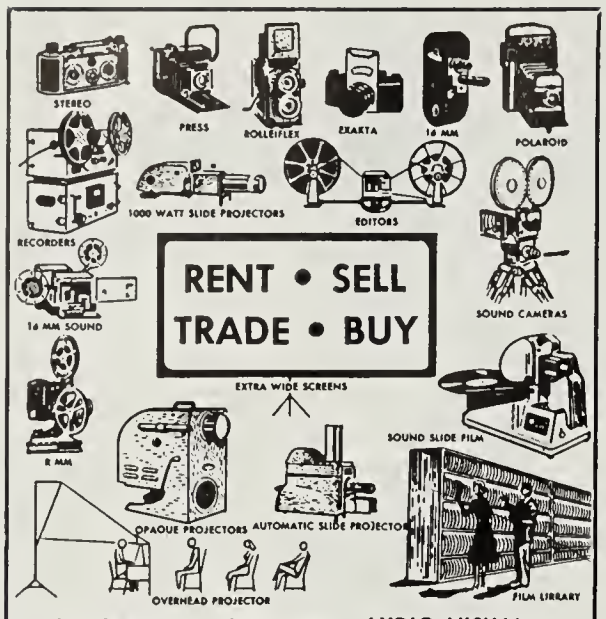
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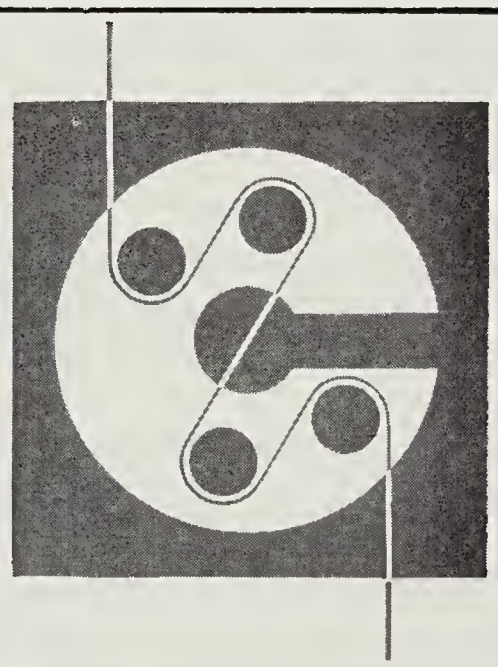
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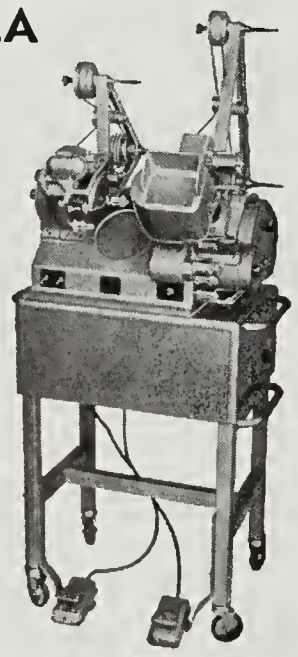
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picture, the dialogue also appears headed by the speaker's name. Blocks of type describing action are usually indented about five spaces closer to the left than blocks of dialogue, so as to clearly differentiate between the two.

Where the picture is to be narrated, the script pages are divided into two parts vertically, with the action described in the left half and the corresponding narration in the right half.

Scenes, when typed in screenplay form, should not be crowded too tightly. Margins should be left ample for making notes and script changes. The whole script should be bound or stapled together within a sturdy cover bearing a label inscribed with the title.

PREPARATION OF SHORT TECHNICAL FILMS

(Continued from Page 99)

When filming a PPI at sound speed we have found it advisable to use a lens opening of at least f/1.4 or f/1.9 when using Tri-X. Under these conditions the indicator controls are adjusted to give as bright a picture as possible without sacrificing the focus or clarity of the image. Deflection modulated indicators such as A-scopes or J-scopes are photographed on the same film at f/4.0 or f/5.6, depending upon the repetition rate of the pattern, with all scope controls placed at their normal settings.

To enhance the realism of films describing equipment in development, a great deal of footage is often comprised of motion pictures taken during the actual experiments for data purposes. Since these are quite often photographed well in advance of the time that the productions themselves are planned and are, in fact, taken for entirely different purposes, every effort is made to obtain film at the time the experiments are performed that will be suitable for inclusion in future technical motion pictures. Consequently the engineers involved try to obtain photographic coverage of the entire experiment that is as complete as possible. The filming of the data is planned so that the entire sequence of the experiment will be adequately described. Of course any special effects that may prove helpful at a later date to explain the experiment must be planned in advance. For example, in showing radar presentations, such as the one illustrated in Fig. 3, it is often convenient to point out a specific target on the scope. When using Tri-X film a pointer or finger (illuminated by a 60-watt light bulb placed at a distance of one or two feet to the side of the indicator so that its light does not fall directly on the scope) as shown in Fig. 2 is satisfactory for this purpose. Furthermore, this procedure is much simpler than producing an optical effect when the film is printed.

At each location where equipment is being adjusted and tested, live action motion pictures are filmed whenever possible. When covering a flight test, motion pictures of the installations, engineers making measurements, and aircraft involved in the tests taking off, in flight and landing, are very helpful in providing good continuity in technical films, not only for the purpose of technical explanation but in documenting the work from an historical approach. Although an engineering test program is usually pressed for time, satisfactory "local color" sequences can be filmed with a minimum of effort provided that they are planned in advance.

After the negative film is processed and edited in the plant, two positive prints are obtained. The first, on double perforated silent film stock, serves as the version used for presentations with extemporaneous commentary away from the plant. To the second print, on single perforated film, a magnetic sound track is added on which the commentary is then recorded in one of the conference rooms at the Sperry plant, using a Bell & Howell model 202 sound projector. An unpretentious sound track consisting of narration without music or sound effects is usually satisfactory. The sound-on-film version in this form is very convenient to use since changes in the commentary can be made at any time by erasing the sound track and then rerecording. If necessary an optical sound version may be made at a later date by recording an optical sound negative which is used in making the release print from the magnetic sound track.

One example of the use of the above techniques is a ten-minute technical film recently produced at Speery for presentation to customers. Exclusive of security notices, title, and "the End" this film contained 19 scenes. Of these, 14 scenes consisted of all or parts of still photographs and drawings. A total of five fairly simple drawings and photographs were used to obtain these fourteen scenes. Three of the drawings were prepared especially for the film, the others were already available in satisfactory form. Three live scenes in the laboratory and outside the plant were photographed for local color and transitional sequences. The two remaining scenes totaling about one-third of the footage of the completed film consisted of data that had previously been photographed on 16mm film in the course of

the laboratory experiments that were described in the film.

The preparation of the drawings, the actual filming, and the editing of the negative required a total of two working days. The printing of the film was done by an outside concern. The resulting film with extemporaneous narrative presented our ideas to the customer with simplicity and clarity.

It has been found that this type of quickly-produced, low-cost motion picture can be a great asset in explaining the operation of an electronic system to the customer. Such a film requires little more time to prepare than a slide-illustrated lecture. However, the increased realism of the motion picture provides an additional understanding of the subject matter that frequently cannot be achieved by other means.

BLIMP FOR THE CAMERETTE

(Continued from Page 91)

shown at "F." The porthole "G" affords a view of the film footage counter which is mounted on the side of every Camerette magazine. The reflex viewfinder eyepiece is shown at "H." By means of the control "J," a reflex mirror is shifted into position to permit viewing through the port at "F." The window "K" gives visual access to the footage and diaphragm marks on the taking lens. The knob "I" provides for clamping a fill or eye light on top of the blimp.

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SHOOTING WITHOUT TRIPOD

(Continued from Page 89)

weather which prevailed rcently. "An excess of clouds almost daily made it a touch-and-go proposition to get the shots we wanted," said McGlone. "Normally Hawaii is bathed in sunshine and we aimed to give every shot that 'sunshiny' feeling—which is why we had to be patient and wait for the sun to shine through. Many a time we would have everything set, then kept our finger on the starting button—ready to shoot the scene within the brief moments when a cloud formation parted and let the sun through. As a result, a shooting schedule which was estimated at six weeks was stretched out to fifteen and required a second trip to the islands to complete."

At this writing, Ted Cate and Ed McGlone are back in Honolulu to shoot some additional footage for the United Air Lines' production, and to start production on a new 16mm color and sound film for Hawaiian Air Lines there. Of course, McGlone brought along his camera brace, because the new production calls for a great number of low altitude aerial shots also. "After seeing the results we got with it in shooting 'Here is Hawaii,' said McGlone, "the new gadget promises even wider use in all our future productions."

SHAKESPEARE

(Continued from Page 95)

used. Only one VistaVision camera was available during the location work. which made adequate coverage of the battle sequences practically impossible. So Heller supplemented this with three Arriflex cameras and had the footage from these blown up to VistaVision proportions and printed horizontally.

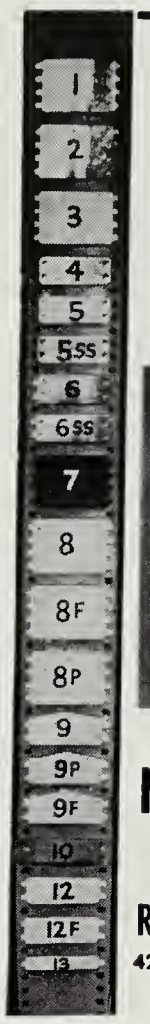
Back in the studio Heller aimed at a simplicity of color effect—"a kind of Eastman Color effect with Technicolor" he calls it—to match the deliberately artificial sets and studio exteriors. Shakespeare took such liberties with London geography that some form of stylization was obviously needed if the Tower was to be shown a mere stone's throw from Westminster Abbey.

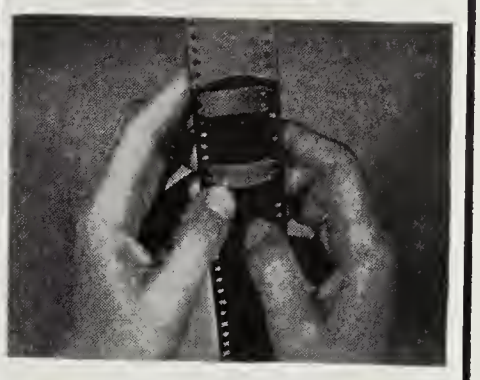
Heller's admiration for Olivier is enormous. "He gave me a free hand." he explains, "but discussed the effects he was striving for before every shot. For Sir John Gielgud's scene in the cell he described his effect of near-darkness in his stage production and said he'd like me to try to imitate it. I didn't think it would work for the screen and suggested stronger atmosphere lighting. In the morning we shot the scene Sir Laurence's way, and in the afternoon my way. Next day, after seeing the rushes, he told me at once that I'd been right."

The nightmare sequence before the battle presented several difficulties. Each of the "ghosts," wearing white make-up, was shot against a black velvet background. As the camera tracked back, a roll of black velvet was automatically unfurled to cover the tracking rails. Later these shots were superimposed over a painting of the background of tents, a laborious matter of mathematical calculation.

"Richard III" is Olivier's masterpiece, a far greater triumph than "Henry V" or "Hamlet." One of the reasons is that Olivier has kept closer to his characters,

(Continued on Page 122)



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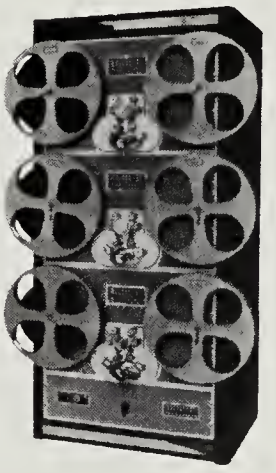
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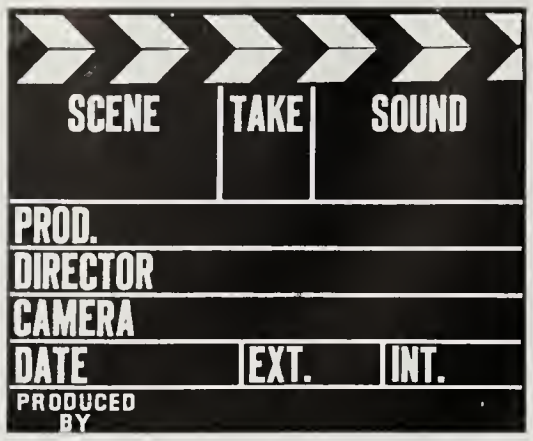
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Booklets Catalogs Brochures

available from equipment manufacturers

Color Temperature

An interesting descriptive 12-page booklet, "Introducing the Color Control Meter," introduces a valuable new instrument for measuring color temperature for photography that was recently announced by General Electric Company. As most cameramen know, the color of light affects the color balance of photography. This booklet explains why in detail and shows how the new G-E meter aids in determining color temperature and explains the corrective methods (via use of filters) for balancing a light source for a given color film.

Booklet is available through the Exposure Meter Information Bureau, General Electric Company, 40 Federal St., West Lynn, Mass.

★

Status of ASA Standards

"Status of Standardization Work on Photography and Motion Pictures" is title of brochure issued by American Standards Association, Inc., 70 East 45th Street, New York 17, N. Y. It comprises a comprehensive index and guide to the standards established by the ASA to date in the named fields. It is an ideal source of reference for those in the motion picture industry dealing with technical developments.

★

Camera Dolly Booklet

J. G. McAlister, Inc., 1117 No. McCadden Place, Hollywood 38, Calif., has prepared an attractive comprehensive booklet illustrating its new completely maneuverable dual-steering Crab Dolly. The equipment is illustrated and described, is pictured in use in recent film productions, and there are diagrams illustrating the versatile manner in which the Crab Dolly may be operated on the sound stage to achieve shots of various types.

★

Photolamp Data

A new photo data booklet containing thousands of facts on films, flash bulbs and picture-making is now available from the Photolamp Department of General Electric Company, Nela Park, Cleveland 12, Ohio.

Titled "G-E Photolamp and Lighting Data Booklet," it consists of 40 pages, is of handy shirt-pocket size (3½″x4½″) and is easily carried with the photographer's equipment. Information includes latest data on film speed ratings, guide numbers, flash and flood lamp specifications and characteristics, and time-light curves. A special feature is the explanation of "triangle lighting." Diagrams and photographs illustrate this method which experienced photographers recommend. Booklet is available from the company or from photo supply dealers.

★

Care of 8mm and 16mm Films

A revision of the booklet, "The Handling, Repair, and Storage of 16mm and 8mm Films," has recently been issued by Eastman Kodak Company, Rochester 4, N. Y.

While of interest to any movie maker desirious of keeping his films in the best possible condition, booklet will prove of particular value to industrial and professional cinematographers as well as visual-education film users.

The twelve-page booklet, punched to fit the Kodak Photographic Notebook, covers possible causes of damage with suggestions for correction, inspection and repair procedures, and storage. Both black-and-white and Kodachrome films are covered. Booklet is available without charge and request should be made to the Sales Service Division of the company.

★

DuPont Films

Descriptive and technical data relating to all DuPont motion picture films is boiled down and presented in concise form in a 12-page folder titled, "There's a DuPont Motion Picture Film for Every Phase of Motion Picture Work," now available from the company's Photo Products Division.

The folder describes each film and gives recommended exposures, developing data, control gamma figures, lists standard roll lengths, describes the type of perforations for each film stock and the safelight to be used with each. Developer and reversal formulas are given and there are a number of charts relating to exposure and use of filters.

Copies of folder may be had by writing the company at Wilmington 98, Delaware, or any of its district offices.

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BELL & HOWELL 285 Filmosound projector, 14 watt amplifier, factory installed synchronous motor, 12" speaker in floor console. Projector in excellent condition. $725.00 value, $545.00. WESTERN CINE SERVICE, INC., 114 E. 8th Avenue, Denver 3, Colorado.

CINE Ektar lenses; set or individually. New condition. Half regular price. M. GRAYSON, Box 4, New York 53, N.Y.

AKELEY Silent Camera with heavy-duty studio type gyro tripod complete, $600; DeVry 24 frames, proportional aperture, $100; Universal 200 ft., automatic dissolve, one-frame shaft, $150; 16mm Cine-Kodak rare model "A," good condition, sprocket machined for sound film, $100. KEN WOODWARD, 24 Lenox St., Uniontown, Penna.

FONDA 16-35mm negative-positive developing machine, rebuilt. METAL MASTERS, 5599 University Ave., San Diego 15, Calif.

EYEMO, single lens F:2.5 Cooke, case, $215.00. Micro 16mm hot splicer, $35.00. C. SAGER, 3940 N Oakland, Milwaukee 11, Wisconsin.

STUDIO & PRODN. EQUIP.

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ARRIFLEX 16 complete with 400' magazine and torque motor, Arri-gyro tripod, Kilfitt, 5, 6 300mm, Xenon 1, 9/16 and 1, 5/25, Zoomar 16-S f:2.8, complete, $3500. TELECAST PROD., 912 Glen Oaks, Pasadena, Calif. RY 1-6534.

ARRIFLEX 35mm Model 11, 32mm, 50mm, 75mm lens, motor, cable, lens shade, filter set, two 200 foot mags., aluminum carrying case, complete, $1475. M. S. GOULD, Box 2869, Hollywood 28, Calif. EDgewood 6-1947.

AURICON Pro single system sound camera, equipped with Modulite "S" variable area galvanometer, 25mm B&H Lumax F:1.9 lens, Auto Parallax View Range Finder, and associate Auricon amplifier. Camera carrying case, iris fade on camera, mike, all cables. In perfect condition and like new. $1350. F.O.B. ERNEST M. REYNOLDS, 165 East 191st Street, Cleveland 19, Ohio.

SYNCHRONOUS CAMERA Motors for Mitchell Standard. New. 110 Volt, 160 Cycle. $405.00 f.o.b. WANTED Mitchell Cameras, equipment. CARL NELSON, 164-12 110th Road, Jamaica 33, N.Y.

(Continued on Next Page)

Classified Ads

(Continued from Preceding Page)

STUDIO & PRODUCTION EQUIPMENT

SYNCHRONOUS 35mm Holmes sound projector complete; $400.00. Regular Holmes new 35mm; $250.00. Used Holmes 35mm; $50.00. RUSSELL SCHLECHT, 1840 Morse Avenue, Chicago 26, Illinois.

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16mm SOUND and picture editing—sound recording—music—effects. DON DUNN'S EL RANCHO AUDIO, near Palos Verdes and L.A. Harbor. 26246 Fairview Avenue, Lomita, Calif. DAvenport 6-4925.

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STEREO COLOR DUPLICATES from your slides, 60c; 2x2 25c, mounted. Best custom work. Send for price list on quantities. BELL SLIDE FILMS, 200 W. 57th St., New York.

SHAKESPEARE

(Continued from Page 119)

both physically and psychologically, than in either of his previous films. Heller countered my suggestion that he had been influenced by Mankiewicz's successful concentration on closeups and medium shots in "Julius Caesar" by insisting that the VistaVision ratio demanded this proximity.

"VistaVision makes you concentrate on lighting instead of composition," he added. "Olivier likes great depth in his scenes, which means stopping right down and using all the light you can muster to get the necessary deep focus effects. There's only a twentieth of the light we had actually on the screen."

Heller prefers VistaVision to CinemaScope. He feels the latter system is too cramped vertically, and is wary of distortion. But his most cutting remarks are reserved for text-book theorists.

"You want to write something," he said, "so what do you do? Go and read how to write? No, you just go ahead and write it. Well, I just go ahead and light a set. It's all a matter of practice."

WHAT'S NEW

(Continued from Page 70)

Telephoto Lens

A new Angenieux 3-inch f/2.5 telephoto lens for 16mm cine cameras has been announced by Bell & Howell Co., Chicago. New lens replaces the company's 3-inch f/3.5 lens, and is made exclusively for Bell & Howell.

New lens is a 5-element true telephoto with the distance from film plane to front of lens only 2.4 inches. Because of its compact size, it can be used on camera turrets without optical or physical interfeernce in combination with most other lenses.

Iris click-stops range from f/2.5 to f/32 with a focusing scale of 4 inches to infinity. The depth of field scale is clear and easy to read. Lens has a C-mount and rotating back for setting iris and focusing marks at the most convenient point. It retails for $99.50.

Animation Stand

Animation Equipment Inc., 38 Hudson St., New Rochelle, N. Y., announces the new Oxberry stand and compound for animation of films and slides. It features the exclusive Tri-motion which gives live motion effects for pictures by combining a number of image movements in the animation procedure.

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FIRST OPTICAL INSTRUMENT

OTHER THAN SPECTACLE LENS WAS THE *CAMERA OBSCURA*, PERFECTED BY PERSIAN SCIENTIST Kamāl al-dīn ABOUT 1320 A.D. CONSTRUCTED LIKE A PIN-HOLE CAMERA, THIS DEVICE REPRODUCES, IN MINIATURE AND IN COLOR, SCENES OUTSIDE THE APERTURE.

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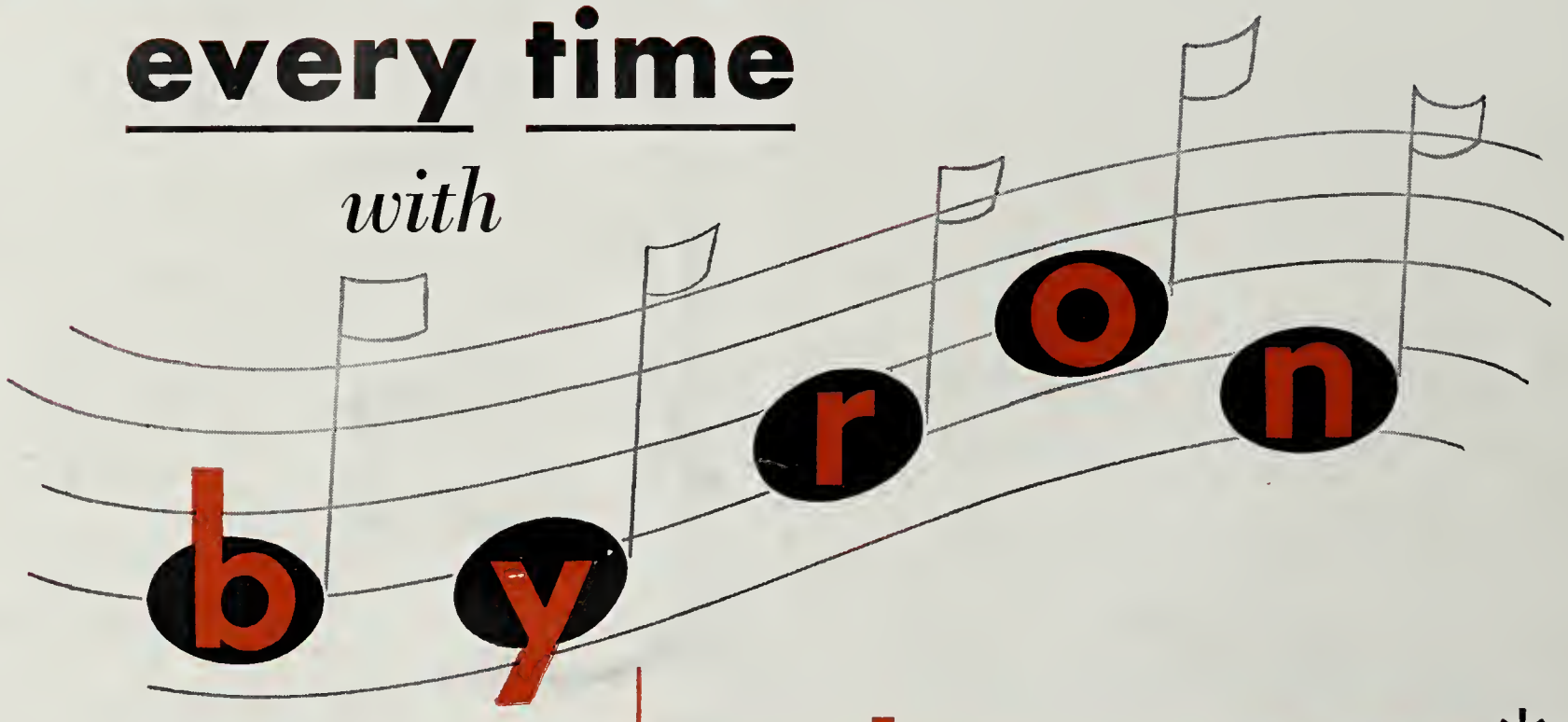
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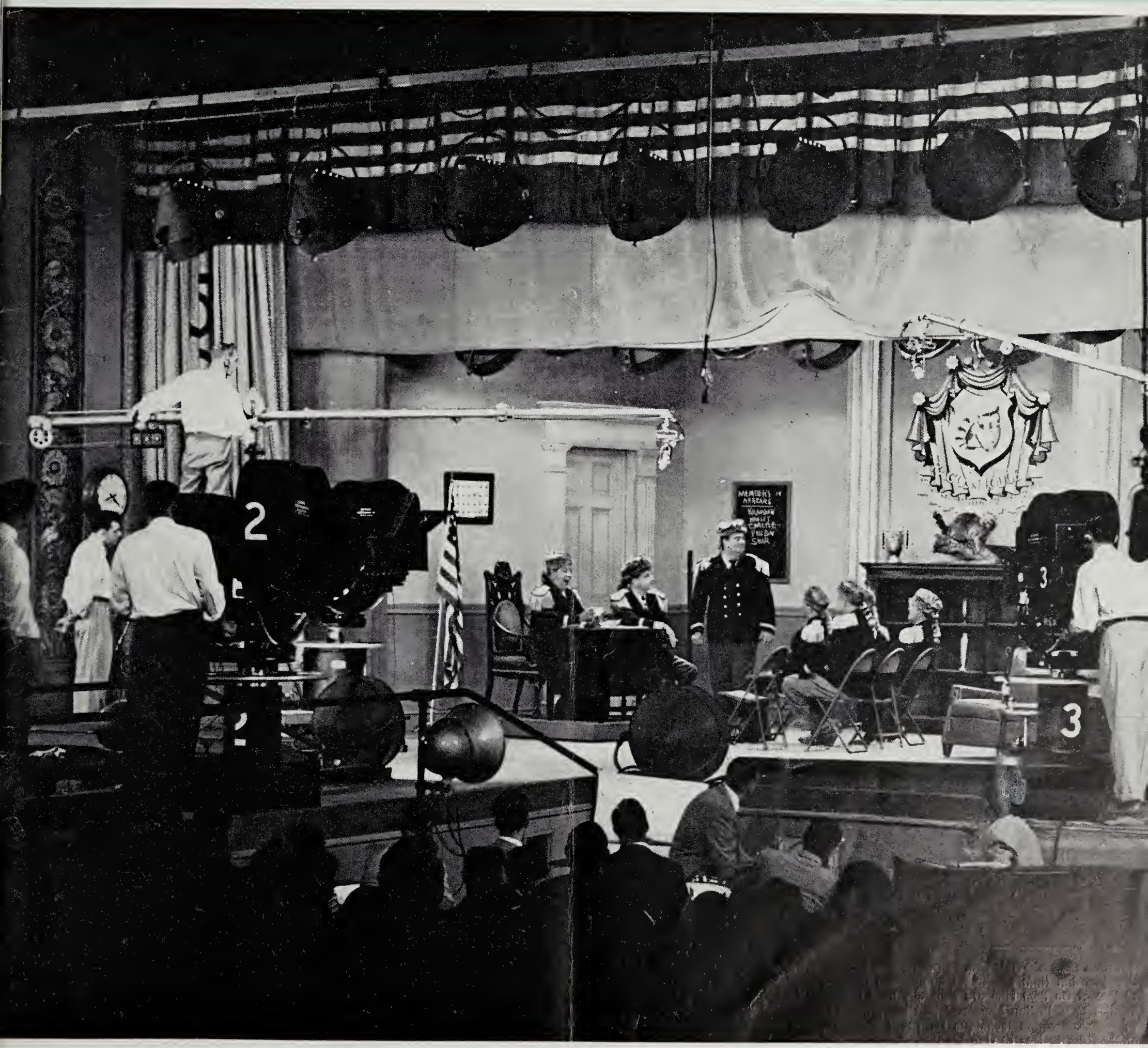
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Cinematographer

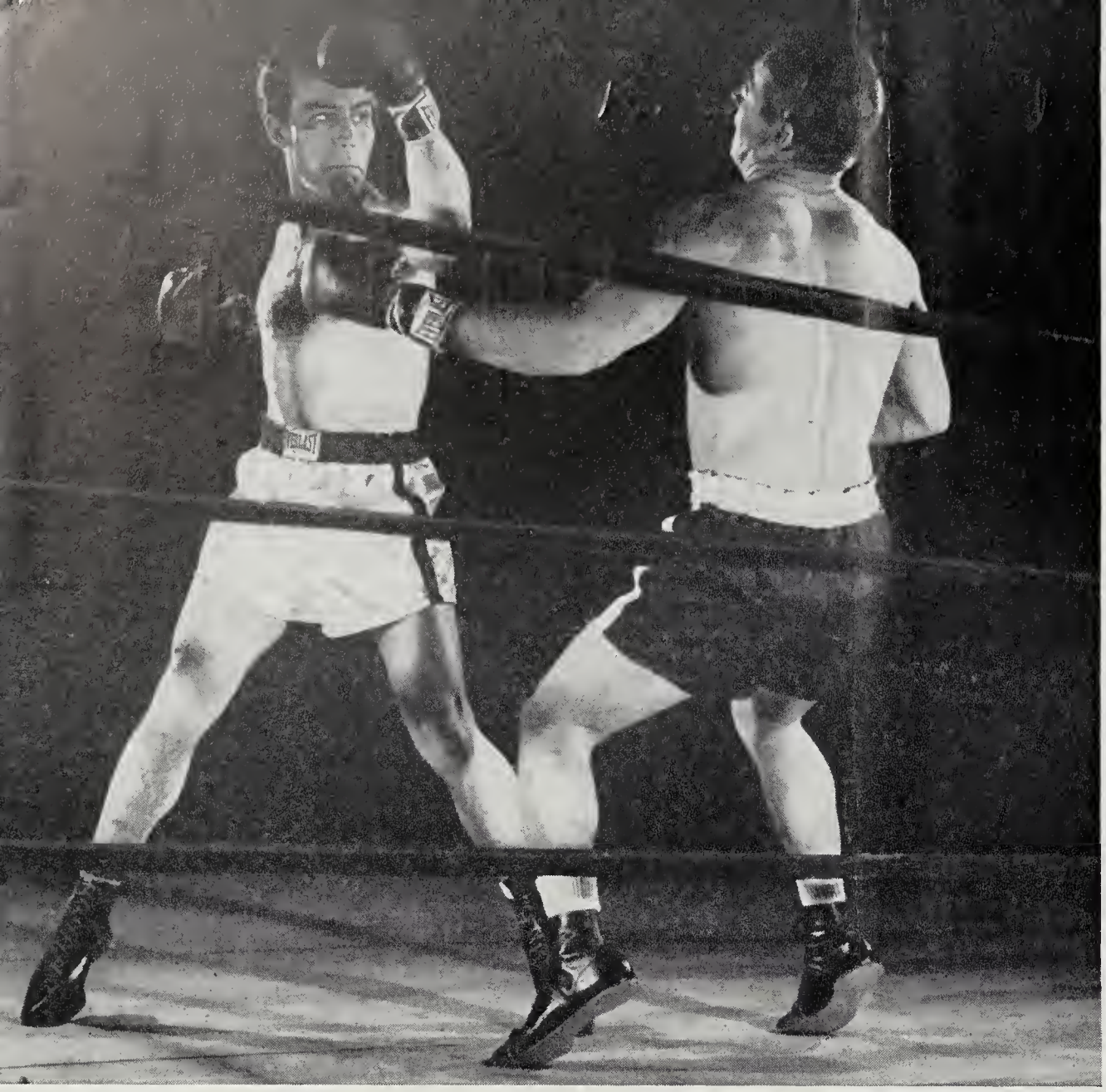
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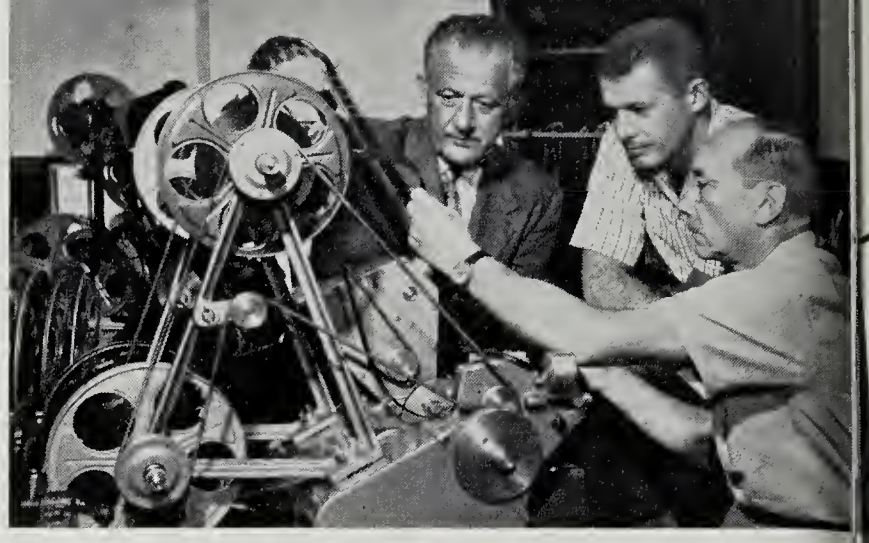


In This Issue . . .

- Arthur Miller Looks at Electronicam
- Nominations for 1955 Cinematography Awards
- Systematic Control for 16mm Special Effects

25c
FOREIGN 35c





Mr. Leslie Winik and Richard Winik discuss editing of sports-event footage with Max Rothstein (right). Dependability and consistency are only two factors that make Du Pont Motion Picture Film ideal for use in sports photography.

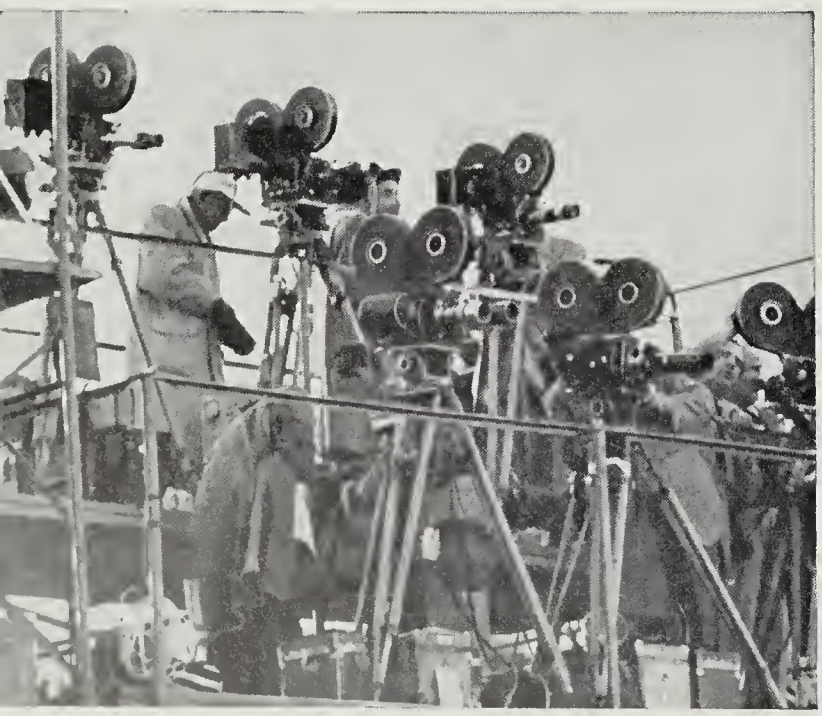


Du Pont Technical Representative, Joe Dougherty (right), examines footage printed on Du Pont Motion Picture Film with Leslie Winik, President of the Winik Film Corp.

Pack a wallop in your footage!

"2 Million Feet of Perfect Images a Year With Du Pont Motion Picture Film!"

—says **LESLIE WINIK,** *President, Winik Film Corp., New York City*



Camera crew of Winik Film Corp. prepares to shoot heavyweight championship fight at Kezar Stadium, San Francisco. Thousands of feet of Du Pont Film are generally used for every fight. Mr. Winik's organization has developed many filming "firsts," such as the slow-motion technique for sports photography and use of the Zoomar lens at ringside.

"We've used Du Pont Motion Picture Films (negative, reversal and print stock) exclusively for 17 years and find they provide the speed, exceptional latitude and minimum grain so necessary for filming sports events," says Mr. Leslie Winik. "We're getting everything we need from Du Pont Type 930 and 931 Rapid Reversal Films in 16 mm., and 'Superior' 2 when we use 35 mm.

"Much of our filming is done in Madison Square Garden, where contrasting light can be very troublesome. One night we shoot a basketball game where light is flat with almost no reflection from the floor. The next night we may shoot a hockey game where there's a tremendous contrast between brilliantly lighted ice and dim light on the audience. We feel the wide latitude which is so necessary for our kind of work can only be obtained with Du Pont Motion Picture Films!"

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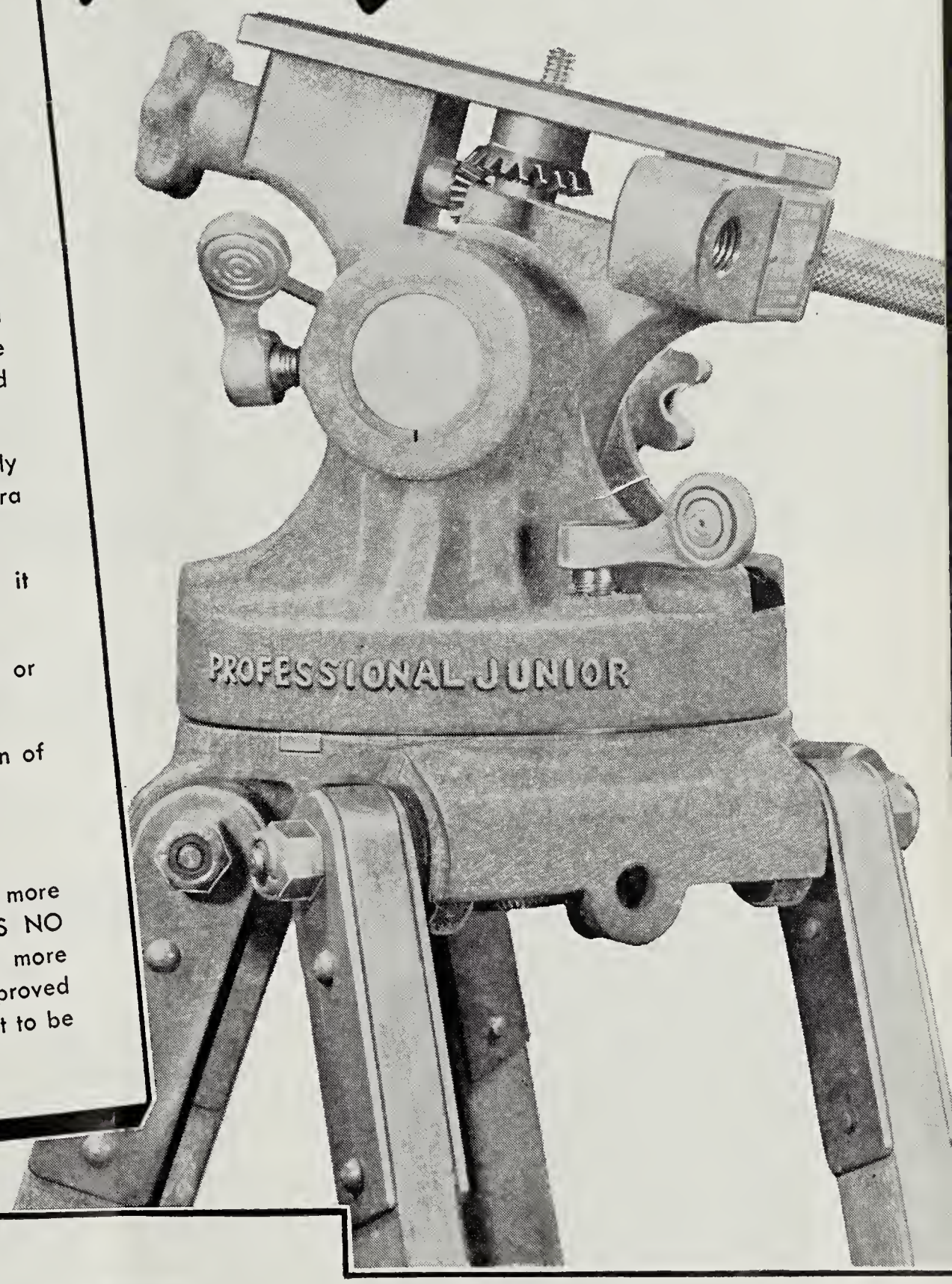
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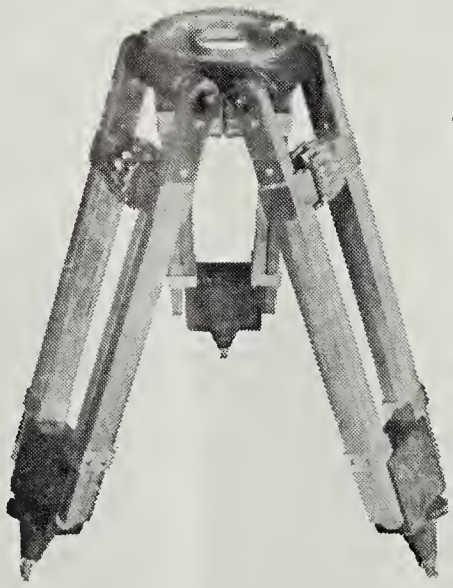
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PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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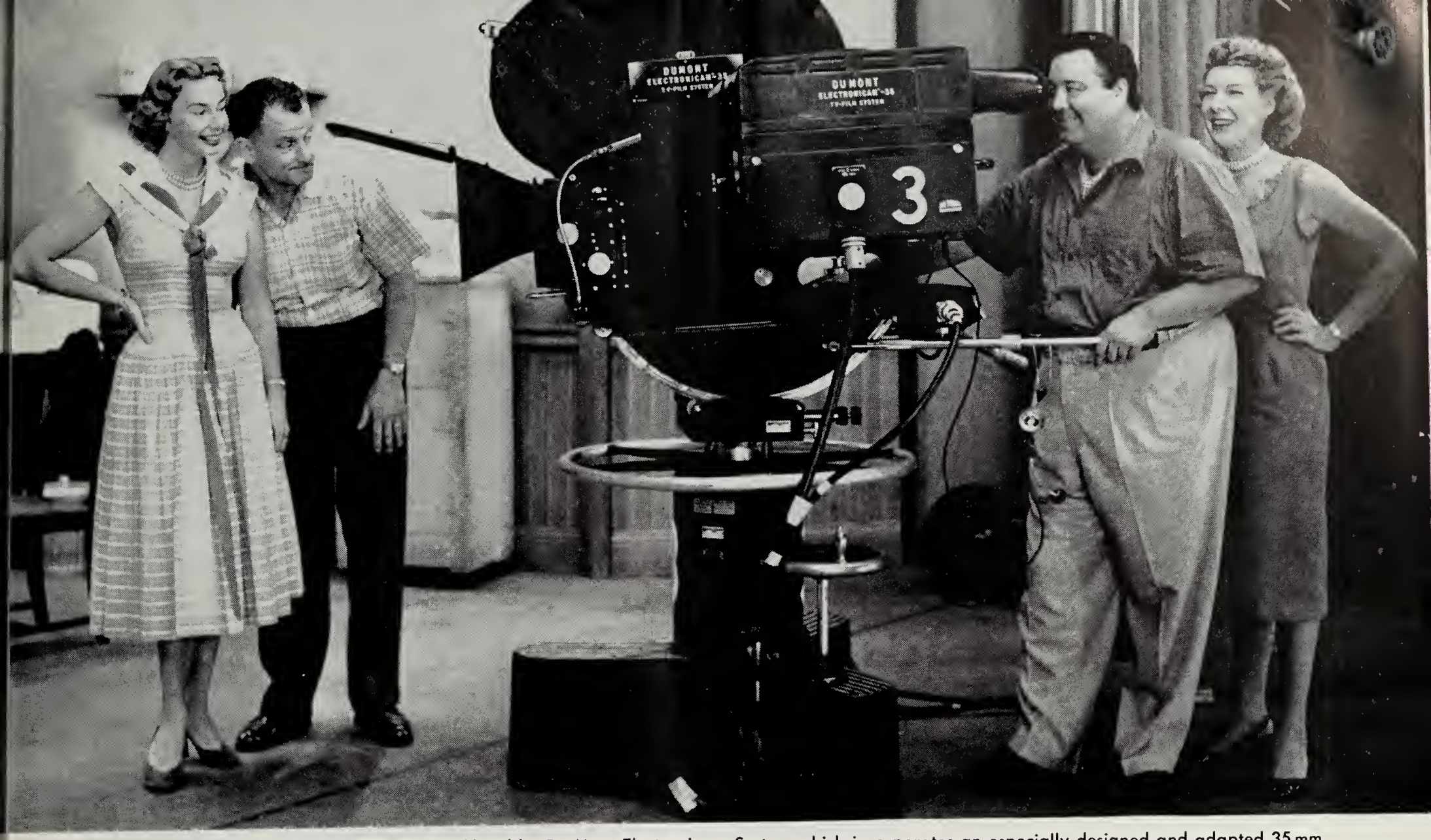
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ON THE COVER

SHOOTING A SCENE for Jackie Gleason's "The Honeymooners" TV film show with the DuMont Electronicam system. Gleason is first to use a video-film system in the production of a major TV film series. Director of photography is Jack Etra. Each show is photographed before a live audience at the Adelphi Theatre in New York. (See story beginning on page 154 in this issue.)

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Canada, $3.00 per year; Foreign, including Pan-American Union, $4.00 per year. Single copies, 25 cents; back numbers, 30 cents; foreign single copies, 35 cents; back numbers, 40 cents. Advertising rates on application. Copyright 1956 by A. S. C. Agency, Inc.



JACKIE GLEASON'S "HONEYMOONERS" is filmed by Du Mont Electronicam System which incorporates an especially designed and adapted 35 mm Mitchell movie camera. Here are Jackie Gleason and Joyce Randolph, right, peering through the camera lens at Audrey Meadows and Art Carney.

NEW ELECTRONICAM REDUCES SHOOTING TIME

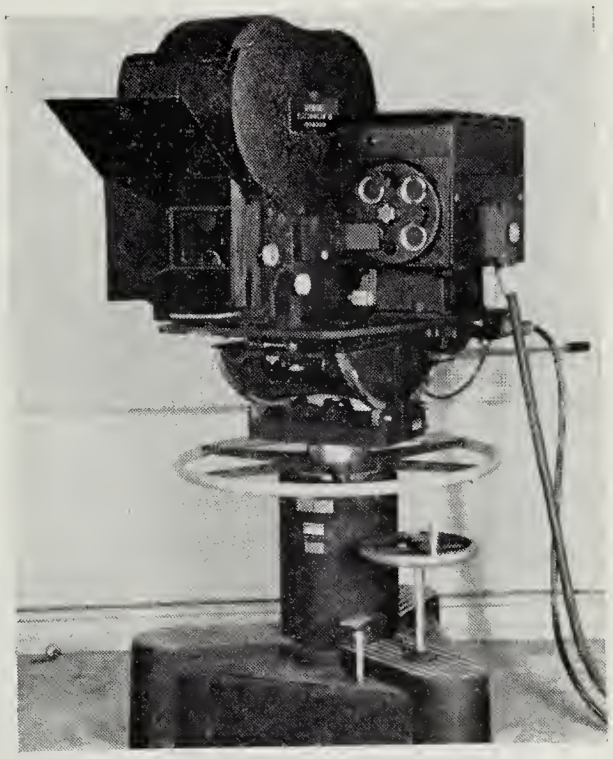
Du Mont's Video-Film System incorporates both Mitchell 35 mm film camera and TV camera

First to use a video-film system in major TV film production is Jackie Gleason's popular show "The Honeymooners." In going "live on film," Jackie Gleason makes use of the new Du Mont Electronicam System, which combines advanced TV techniques with highest quality 35mm photography.

Heart of the Electronicam System is a completely new type of unit, blending a Du Mont TV camera and a specially adapted Mitchell 35mm camera using a common lens system. It gives the producer full advantage of the best techniques of motion picture production while enjoying the time saving and broadened creative scope available in video's electronic practices. Savings in shooting time and costs are substantial.

The 35mm Mitchell cameras used as integral parts of the Electronicam System produce consistently superior black and white films, as well as color films which are unequaled for uniformity of quality. Mitchell cameras today serve not only in the television industry, but also are the predominant choice in the production of governmental, industrial, research and educational films, as well as being standard equipment for major studios throughout the world.

Complete information on Mitchell cameras is available upon request on your letterhead.



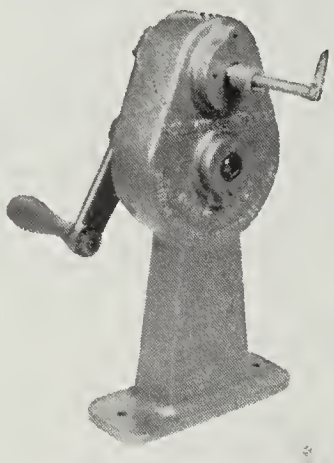
Du Mont Electronicam pick-up; Mitchell 35 mm film camera on left, TV camera on right.

***85% of professional motion pictures shown in theatres throughout the world are filmed with a Mitchell**

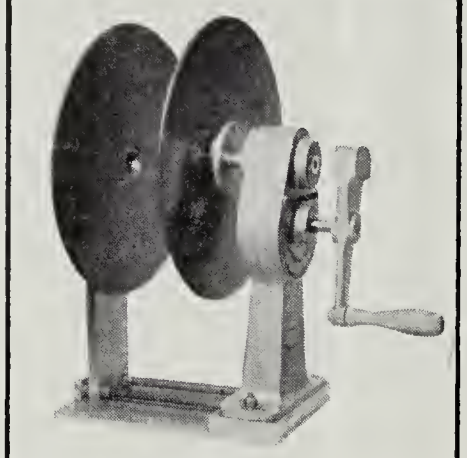


Scene from "The Honeymooners" shows Jackie Gleason and Art Carney on set before three pick-up units of Electronicam System. Each pick-up unit has both TV camera and specially designed Mitchell film camera.

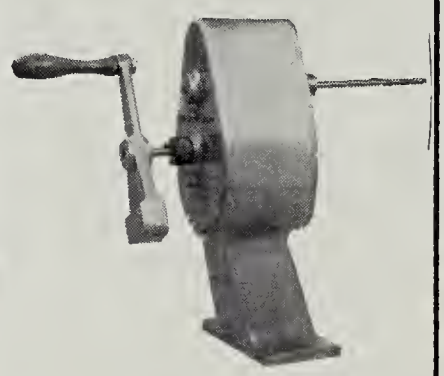
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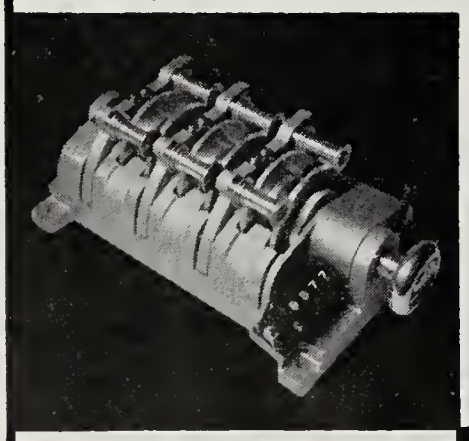
power rewind

precision film editing equipment

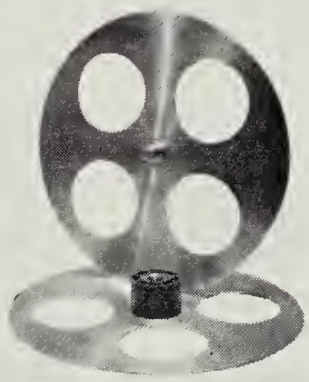
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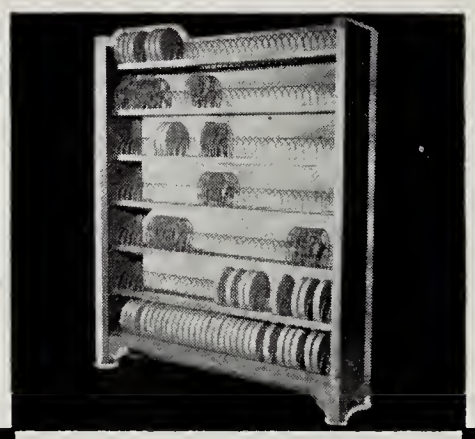
synchronizer



split reels

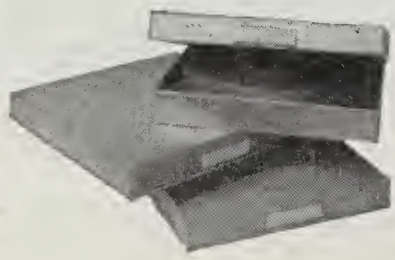


film racks

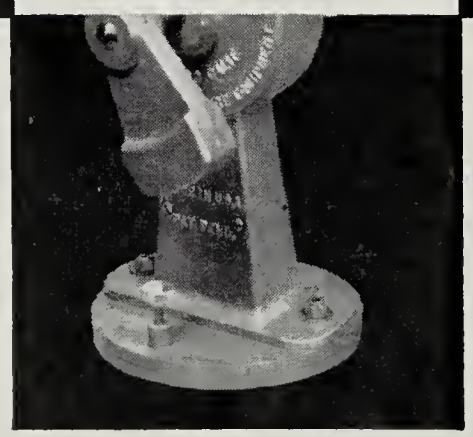


editing table





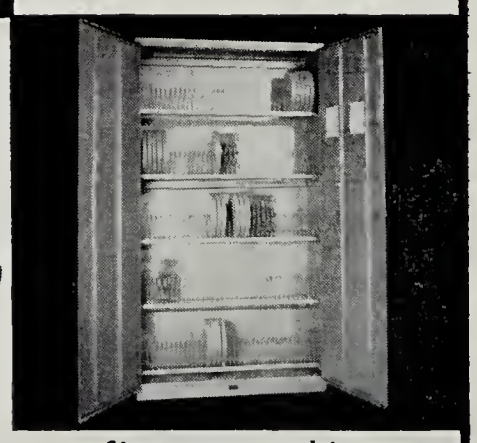
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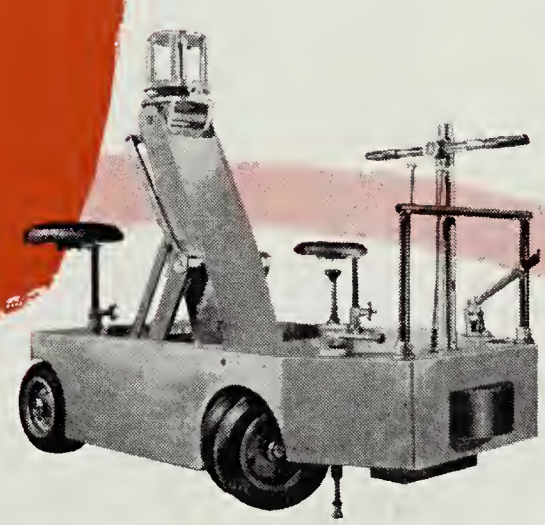
*Based on recent ARB Audience Composition Studies of Network Situation Comedies.

1. I Love Lucy 44.8
2. Honeymooners 34.2
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4. Our Miss Brooks . . . 29.3
5. Burns & Allen 28.5
6. Life of Riley 26.2
7. Make Room For Daddy 21.9
8. Bob Cummings 20.9
9. Meet Millie 20.6
10. Father Knows Best . 19.6

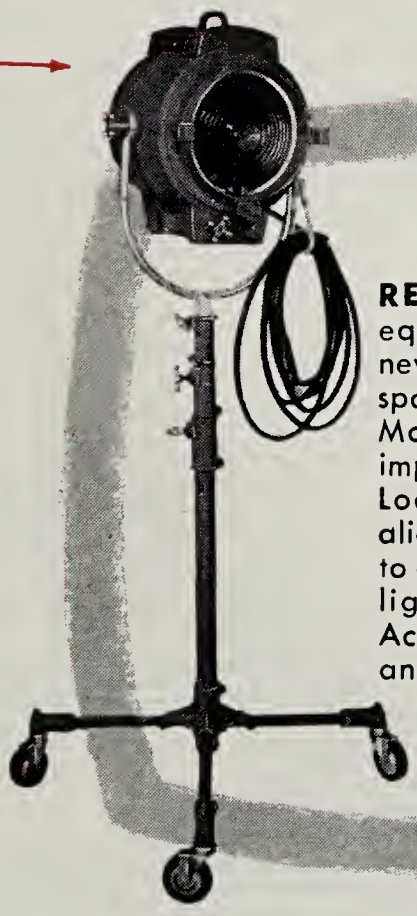
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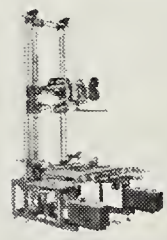
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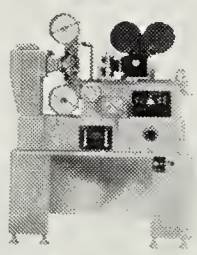
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Industry NEWS

For the second consecutive year, Consolidated Film Industries won a clean sweep of first place honors in the laboratory category of *Billboard's* Annual TV Film Service Awards. CFI duplicated its showing of last year by being named first in quality, first in speed and first in economy among the nation's film processing labs.

Consolidated recently opened a brand new million-dollar processing plant in New York to help handle the growing need of film laboratory facilities on the east coast.

★

A major advancement in magnetic recording was demonstrated before the Audio Engineering Society in Los Angeles recently when William V. Stancil, president of Stancil-Hoffman Corporation, unveiled his company's new printed circuit completely transistorized recording and playback amplifiers. The amplifiers, three in all, printed on fibreglass cards, are approximately 2″ x 6″ in size. In all, 12 transitors are used.

The amplifiers have an amplification range up to 90 db, yet weigh but 8 ounces and require less than 1/10 the power of an ordinary radio set pilot lamp to operate.

★

Movielab Film Laboratories, New York City, recently became the first film processor in the east to demonstrate closed TV circuit screenings.

For the first time, east coast film producers and technicians can now view film results from their own offices and studios almost as quickly as film comes out of Movielab's laboratory.

★

A display of the latest developments in professional equipment for motion picture production, never before assembled under one roof, has been arranged by the Society of Motion Picture and Television Engineers to be held in conjunction with the Society's 79th semi-annual convention at the New York Statler, April 30 to May 4.

Display will include film processing and editing machines, motion picture and high-speed cameras, lenses, sound and animation equipment, and TV color cameras and projectors.

The Association of Cinema Laboratories will also meet in New York during SMPTE convention week.

Auricon Hollywood

NBC

Maurice L. Levy

Newsreel Cameraman of the Year...

...films top TV News with AURICON 16mm Sound-On-Film Camera!



Maurice L. Levy, NBC-TV's Ace Cameraman recently named "Newsreel Cameraman of the Year" is one of the many top newsmen who shoot award-winning films with Auricon 16mm Sound-On-Film Cameras.

Racing to provide the public with up-to-the-minute coverage of the news, Mr. Levy spans Texas and the entire Southwest in a radio-equipped plane. Wherever fire, flood or tornado strikes, Levy's Auricon Sound Camera films the news as it happens!

This is another example of how Auricon 16mm Sound-On-Film Cameras are being used to produce Television Newsreels, as well as Film Commercials, Dramatic Inserts and local Candid-Camera programming with speed and dependability.

Auricon Cameras are sold with a 30-day money-back guarantee. You must be satisfied!



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Airplane photo (at top) shows Maurice L. Levy, NBC-TV's **Ace Cameraman** with his Auricon "Cine-Voice" 16mm Sound-On-Film Camera. **Pilot Julius Hudson** (Center), and **Sound Man Tom Journeay** complete the high-flying Newsreel Crew.

Photo (above) shows Maurice L. Levy with Auricon "Cine-Voice" which helped him win top award in Annual National Press Photographers Association Competition, and title of "Newsreel Cameraman of the Year!"

THE Auricon Hollywood LINE



MANUFACTURERS OF SOUND-ON-FILM RECORDING EQUIPMENT SINCE 1931

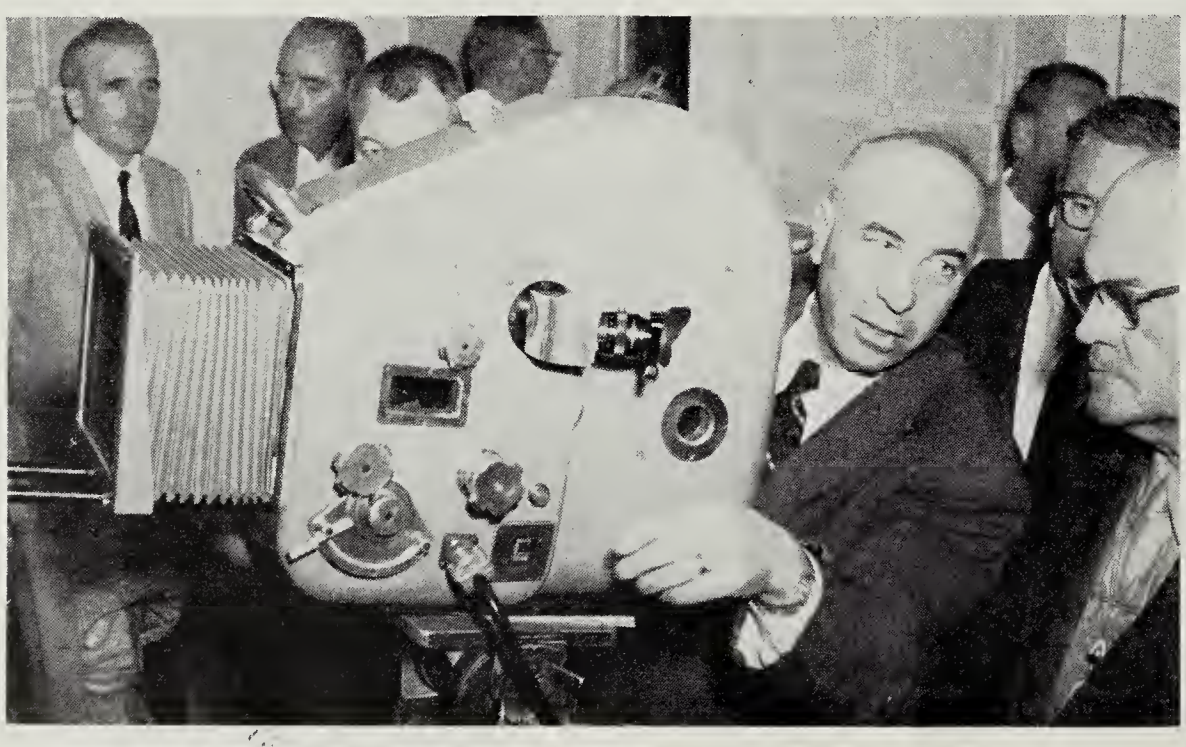
Hollywood
Bulletin Board







THE ASC's February monthly dinner-meeting was marked by the greatest attendance ever recorded for a Society meeting. Part of the record-breaking crowd is pictured above as it listens to talk by William J. German, honored guest, who is glancing at his notes, in center photo, following introduction by chairman Charles G. Clarke. Eastman Kodak's Emery Huse (right) spoke briefly about latest developments of the new Plus-X film, preceding the screening of a demonstration reel.





BENJAMIN BERG demonstrated the new Eclair Cameblimp for the Camerette camera, which he distributes in the U.S. In photo above, he explains some of the fine points of equipment to Dan Clark, while Winton Hoch and Stanley Horsley discuss equipment in background. Vaughn Shaner (right photo) of Eastman Kodak, spoke to ASC members on some of the fundamental aspects of Eastman Color negative and print film, which was illustrated by slides. Former Society president Charles G. Clarke chairmanned the meeting.

For the first time, since the inauguration of the Golden Globe Awards by the Hollywood Foreign Press Association, no awards for achievement in cinematography were made this year. According to a HFPA spokesman, decision followed inability of committee to arrive at clear cut decision. The award is not to be permanently eliminated however, and will be resumed in 1957.

• • •

American Society of Cinematographers recently admitted to Active Membership the following Hollywood cameramen: Carl Berger, Clark Ramsey, Ellis Thackery, and John MacBurnie. Admitted to Associate Membership were Dennis Godfrey, of the W. J. German Hollywood office, and G. Carleton Hunt of General Film Laboratories, Hollywood.

• • •

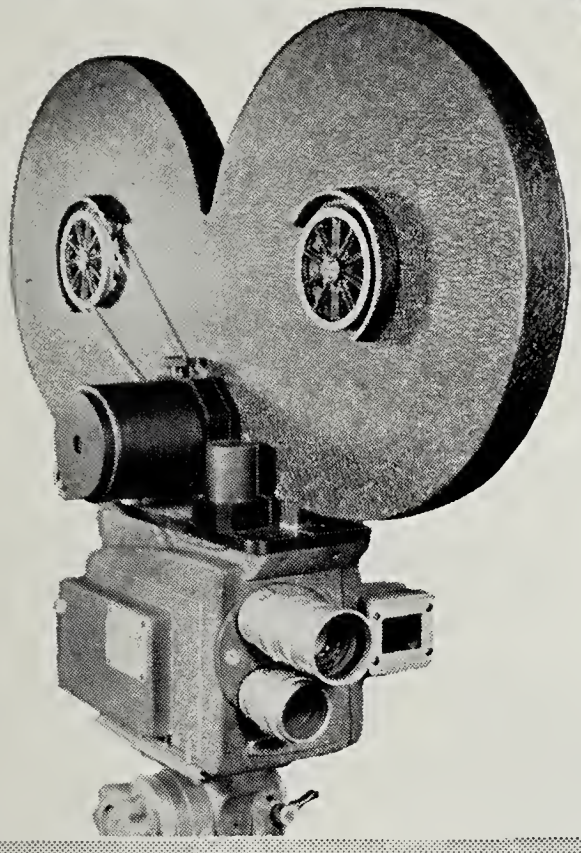
Frederick Gately, A.S.C., last month, was signed to photograph the first in a series of new half-hour television films featuring Barbara Stanwyck, produced by Jack Denove at Keywest Studios, Hollywood.

• • •

W. J. German, president of the firm bearing his name and an Honorary Member of the American Society of Cinematographers, has been named chairman of the motion picture industry's campaign for the 1956 Greater

(Continued on Page 138)

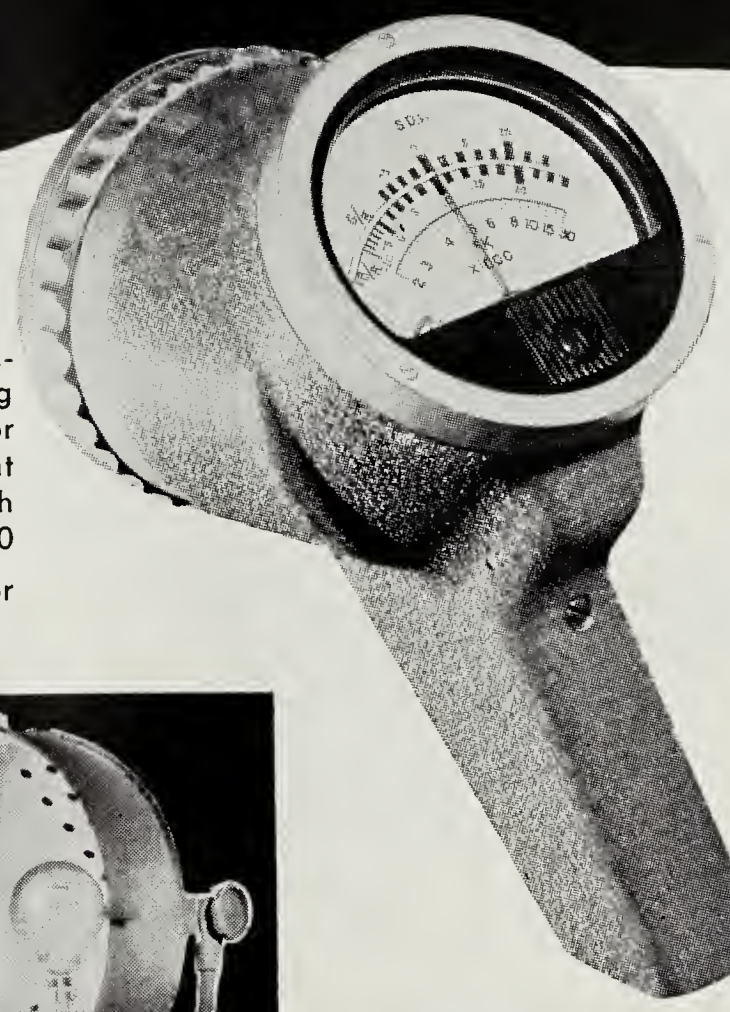
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cludes torque motor for magazine takeup. This precision con-ersion permits attachment of 400 ft. magazine (11 min. running ne) or 1200 ft. magazine (33 min. running time). Also provides for stallation of Veeder footage counter. We can convert your present ne Voice or supply you with unit already converted for use with cternal magazines. Conversion-less magazines $450.00

ositive turret-type Viewfinder with parallax adjustment installed for nall additional charge.



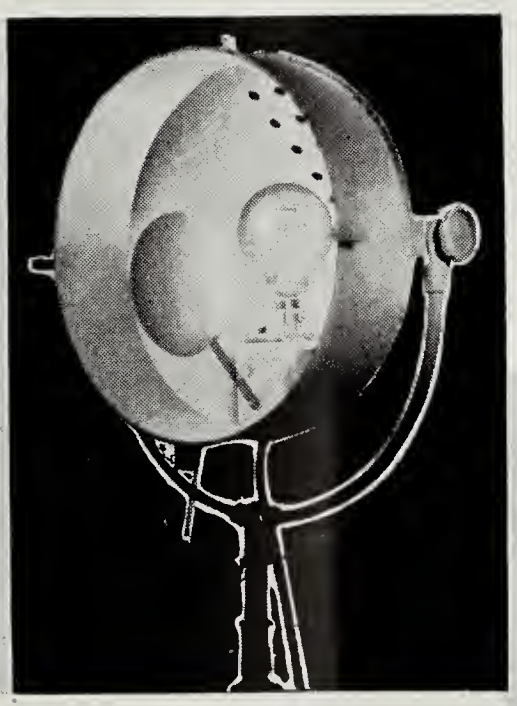
New **SPECTRA**
3-color **METER**

Only accurate meter that measures *all* light sources, including *daylight*. Measures the proportionate amounts of all 3 primary colors in the light source, and indicates the filters needed for positive color correction. Product of Photo Research Corporation.

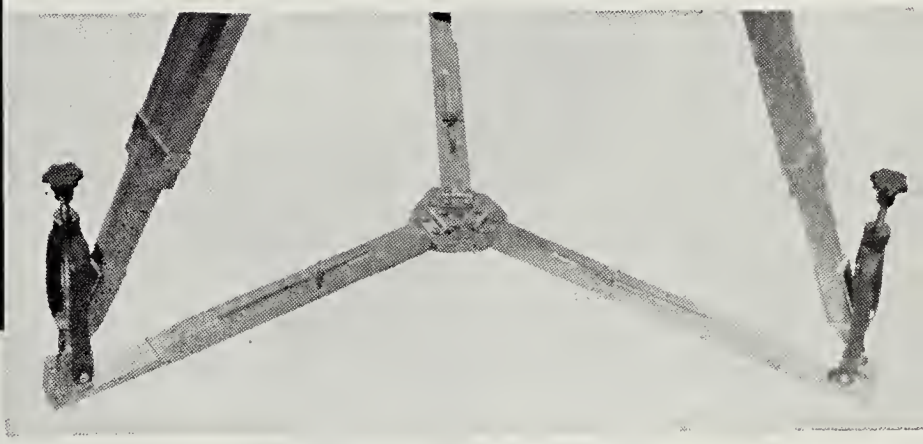
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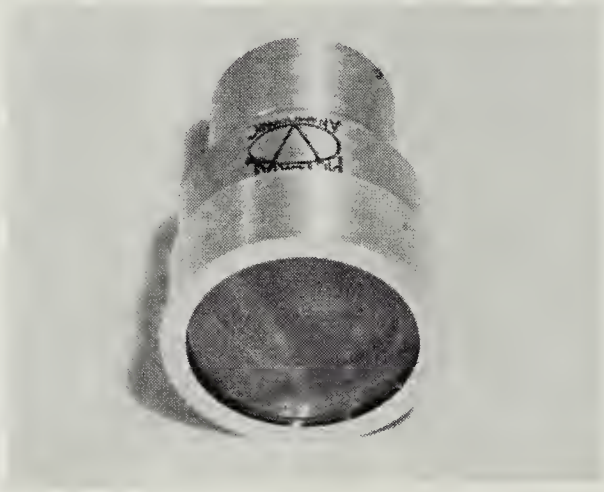
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WHAT'S NEW

. . . in equipment, accessories, service



Anamorphic Lens

The Pictorial Company, 2910 Broad Street, New Castle, Indiana, announces a combination 35mm/16mm anamorphic lens that can be used for both taking and projection. Lens is said to be entirely compatible with CinemaScope, and excellent for both color or black-and-white films.

It is small, light in weight, and fastens to the camera lens by means of an adapter. The lens may also be used with arc light 16mm projectors, is 3½″ in length, and 2½″ at extreme diameter. Of fixed-focus type, focusing is done in the camera lens in photography.

Tewe-Motivefinder

Ponder & Best, 814 No. Cole Avenue, Hollywood, Calif. announce their appointment as distributors of the Tewe-Motivefinder, an optical device for use by cinematographers for visualizing



scene and picture perspective. The finder provides the constant and correct proportions in accord with the corresponding focal length of lens used on camera. Even before setting up the camera, it is possible to determine the proper lens to use for a given distant shot out of doors.

List price of Tewe-Motivefinder is $39.50, which includes flexible metal neck chain and leather case.

Camera Lens Speed Increased

Bell & Howell Company, Chicago Ill., announces a new model 8mm Monterey cine camera having a faster, f/1.9 lens and "Sun Dial" lens setting. Tradenamed the Monterey DeLuxe, camera features simple "set, sight, and shoot" operation. For more precise exposure



settings, the lens has a range of stops from f/1.9 to f/16. Otherwise, a twist of the Sun Dial to a printed description of the outdoor light automatically sets the lens at the proper f/ stop.

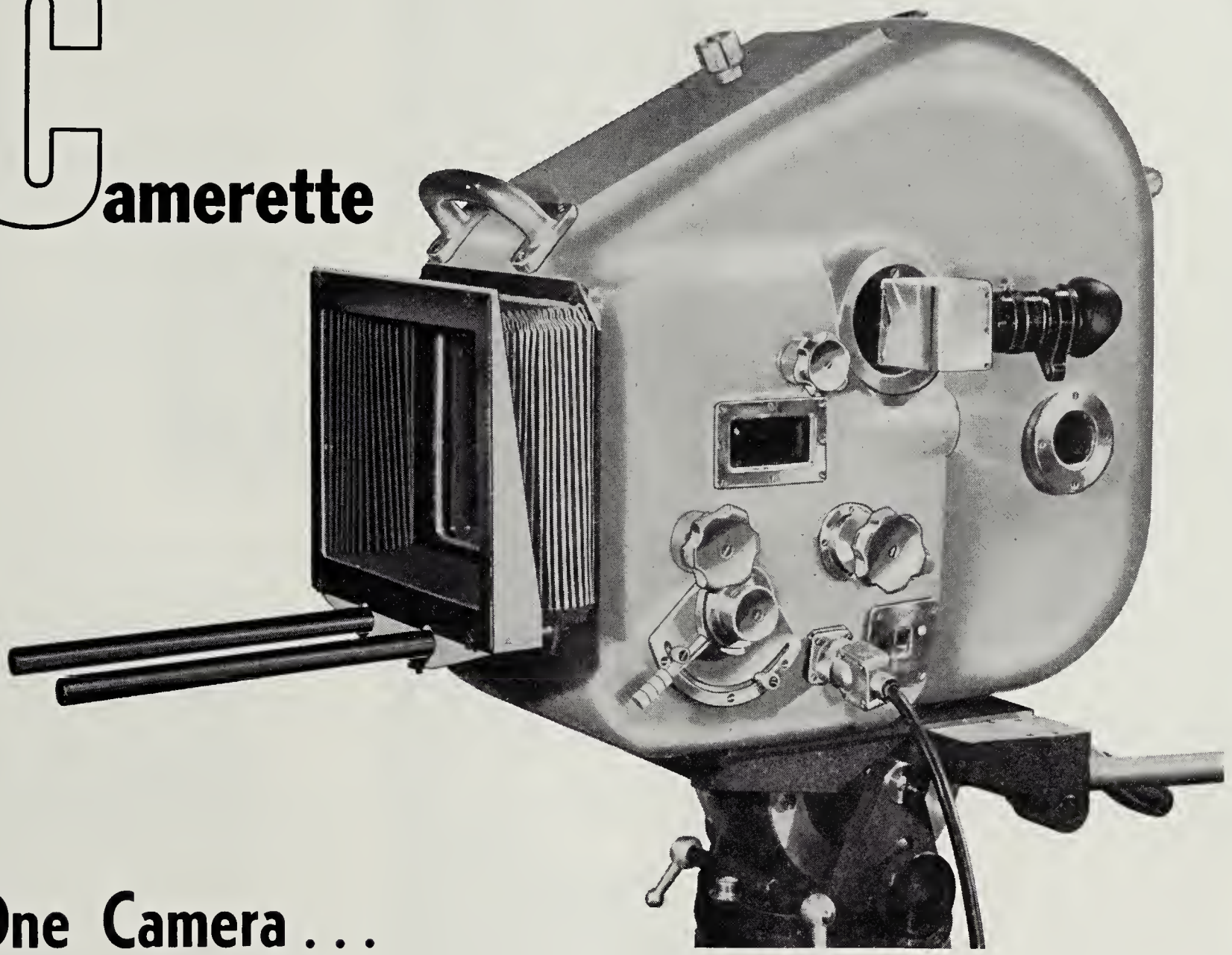
A full winding of the motor spring provides a full 10-ft. run at constant speed. The three-way starting button can be set for normal operation, continuous run or single-frame exposure for trick shots and animation. List price is $64.95.

Silicone Cloth

Distributor's Group, Inc., 756 West Peachtree St., N.W., Atlanta, Ga., offers the Filmagic Cloth, a soft, scratchless, flannelette cloth said to be ideal for wiping lenses, film surfaces, etc., dustfree. Size 12″x18″, list price is $2.00 at cam-

(Continued on Page 186)

Camerette



One Camera . . .
One Blimp . . .
For Both 16mm and 35mm Cinematography

- Reflex viewing through taking lens at all times.
- External Follow-focus control.
- External iris control.
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- Quick-change magazines and lenses; retractable camera carriage.
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- 63 EDITING ROOMS
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- For Color it's Rainbowlab Inc.

MOVIELAB FILM LABORATORIES, INC.
619 West 54th Street, New York 19, N. Y. JUdson 6-0360

BULLETIN BOARD

(Continued from Page 134)

New York three million dollar appeal of the National Foundation for Infantile Paralysis.

• • •

William H. (Duke) Greene, A.S.C., 61, veteran director of photography, died February 28 of a coronary ailment at his home in Brentwood, California.

Born in Rhode Island, Green had been associated with Technicolor Motion Picture Corp. since 1917. At the time of his death, he was a director of photography with Technicolor.



"Duke" Greene

In 1936 he received a Special Award for color cinematography for his work on "Garden of Allah," and in 1917 he received the Special Award for color cinematography on "A Star is Born." In 1943 he received an Oscar for color cinematography on "Phantom of the Opera." He is survived by his wife.

• • •

Although "Cinerama Holiday" was one of the candidate productions considered for an Academy Award for achievement in color photography for 1955, it failed to show in the voting for a place on the nominations ballot. Nevertheless, Harry Squire, A.S.C., who photographed the production in collaboration with Joseph Brun, A.S.C., was present in Hollywood the night the nominations were announced, just in case. Squire had flown in from New York to consult on production technicalities in connection with his next Cinerama assignment.



Harry Squire

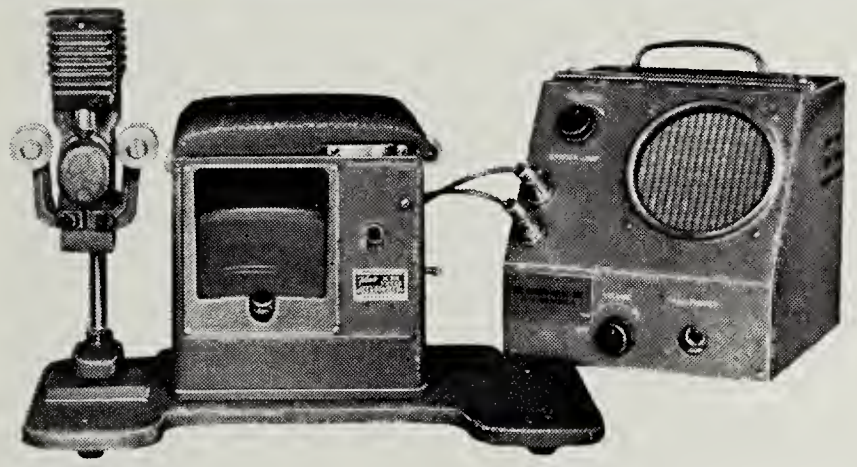
• • •

Look Magazine and The Screen Producers Guild will present the Third Annual Inter-Collegiate Awards Screening honoring the best campus-produced motion pictures for the scholastic year 1954-1955 at the Scren Directors Guild Theatre in Hollywood the evening of March 9, 1956.

This year's winners are: Gold Award, "One Way Ticket to Hell," by Bamlet L. Price, Jr., Univ. of Calif.; Silver Award, "Clay in Your Hands," Wayne Univ.; Bronze Award, "The Face of Lincoln," Univ. of Southern California.

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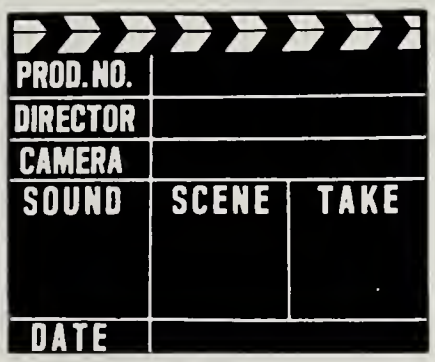
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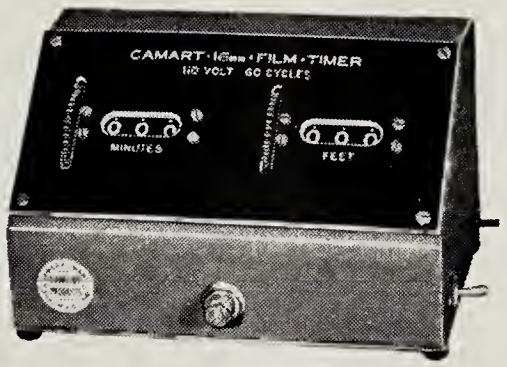
CAR TOP CLAMPS . . . heavy construction, easy to attach. Set of 3, **$28.00.**



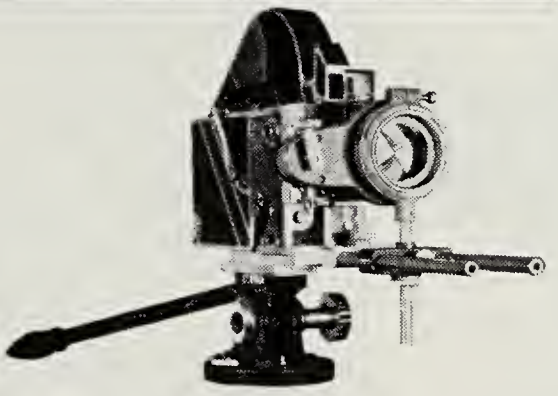
TIGHTWIND ADAPTER . . . winds film smoothly and evenly without cinching or abrasions. Fts 16mm & 35mm standard rewinds. With core adapter, **$29.00.**



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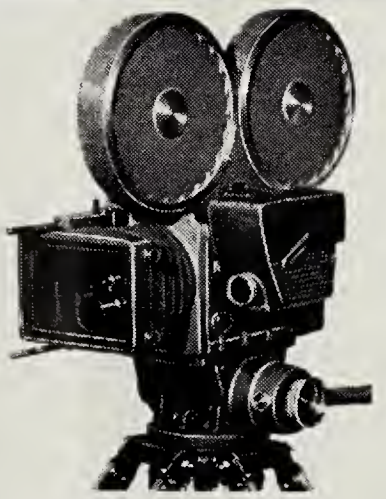
SYNCHRONOUS FILM TIMER. 16/35mm combination, **$89.50.** Single footage counter, **$45.00.**



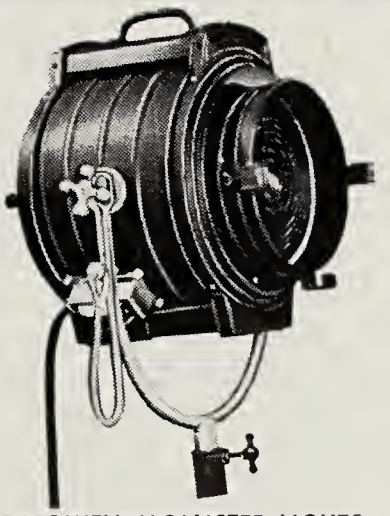
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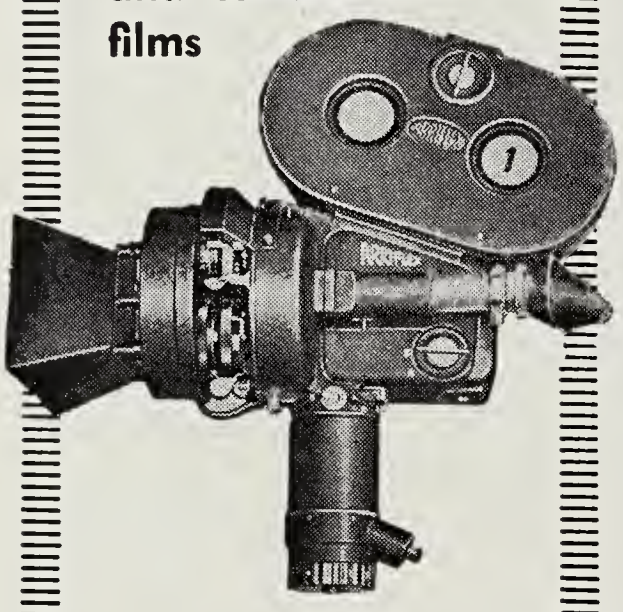
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YOUR QUESTIONS

ANSWERED BY JACKSON J. ROSE, A.S.C.

QUESTIONS of general interest will be answered in this column. We regret that demands on the editor's time will not permit personal replies.—*Ed.*

Q I am preparing for an extended trip through Africa to shoot 16mm color film. What precautions should I take to protect my supply of film in that climate?—R.H.H., Illinois.

The most dangerous elements in the tropics for motion picture film are heat and humidity. Humidity causes mildew to form on unprotected film while extreme heat will create chemical fog over an entire roll of film. In tropical climes care must be taken to keep all exposed and unexposed film in a dry, cool place and away from damp ground.

After film has been exposed, it should be dehydrated to remove any excess moisture before film is canned and shipped. This may be done by taking black paper, such as is used for wrapping film, and drying it thoroughly by placing it in an oven. Wrap the film in this paper and place in metal container overnight. The paper will absorb any excess moisture. Never use newspaper or common wrapping paper for this purpose as they usually contain chemicals harmful to film.

Q At an auction recently I purchased several photographic items, among which was a lens whose footage and f/stop marks were almost entirely obliterated. How can I 1) determine the focal length of this lens, 2) what size area it will cover, and 3) the speed of the lens?—A.M.J., California.

Answering your first question: mount lens on a frontboard and attach to a view camera. Focus lens on infinity and measure the distance from the center of the lens (diaphragm) to the ground glass. This will give you the focal length.

Answer to question No. 2: On the ground glass you will have a circular picture (if the view camera is large enough). This image is called the circle of illumination and its diameter represents the extreme limits of the square or rectangular picture it will reproduce, thus giving you the picture size.

Answer to No. 3: Measure diameter of lens and divide it by the focal length to arrive at the "speed" of the lens. For example, if diameter measures 2 inches and the focal length is 8 inches, the speed is 4 or f/4.

Q I have a Filmo 70-DA camera with single frame exposure device. What f/stop should I use for single frames for subjects shot at 24 f.p.s. at f/8 under same lighting value?—J.J.L., Canada.

Assuming that you are using the special single-frame device manufactured by Bell & Howel for attachment to the Filmo 70-DA, single-frame exposures will be approximately 1/30 second using an f/ stop of 8 at 24 f.p.s. (Exposure 1/42 sec.), the stop for single frame exposures would be f/9.1.

Q Is a color temperature meter essential to good Kodachrome cinematography for 16mm industrial productions?—B.S., Florida.

For professional color cinematography, one must be concerned, not only with having *enough* exposurable light, but with having the right *quality* of light as well.

In exterior photography, the quality or *tone* of the light varies greatly with the location, the season, and the time of day. This variation in color temperature is measurable in units known as *degrees Kelvin*. The temperature of so-called "average" sunlight is in the neighborhood of 6000 degrees Kelvin, and the outdoor type Kodachrome is balanced for this average.

However, in the early morning hours there is an abundance of blue rays in the light, whereas in the afternoon red rays predominate. Best color temperature uniformity can be maintained by shooting Kodachrome between the hours of 10 a.m. and 3 p.m.

For the cinematographer who wishes to be exacting, a color temperature meter plus the necessary corrective filters will enable him to achieve the ultimate in color fidelity.

CORRECTION

In answering "J.H., Dakota's" question last month about CinemaScope print stock, the word "pitch" was inadvertently used instead of "size" in the statement that the print stock "has sprocket holes of a different pitch than regular 35mm film."—Editor.



Why SOUND MASTERS Selected...
The **ARRIFLEX 35** Model IIA
To Shoot ***'Speechless By Mistake'*** for the Bell System

The Bell System wanted a color film that would help prevent accidental damage to buried and aerial telephone cables by dramatizing some of the common causes of such damage and their effect on vital communications. SOUND MASTERS of New York was selected to make the film.

The script called for 'on location' filming — in fields, on highways, in ditches, on 'Main Street'. More than 95% of the film required live, lip-synchronized sound. A versatile, easily maneuverable camera was needed for this job.

SOUND MASTERS selected the Arriflex 35 Model IIA with Synchronous Motor and Sound-Proof Blimp — and filmed all the sequences with this equipment within a period of five weeks. *Speechless By Mistake* has been completed and will soon be released by the local Bell Telephone Companies for public showings.

Says Mr. F. C. Wood, Jr. vice president in charge of production, "We acquired and used the Arriflex outfit because it was the lightest, most compact equipment we could find. It would have been next to impossible to have done the job so quickly and easily with any other camera. The Blimp was perfect both indoors and out.

"Needless to say, we were pleased with the results, as was also the client. The pictures were rock steady and needle sharp — thanks to the new film gate and intermittent, and to those wonderful Schneider lenses. The whole film was a complete success.

"The most wonderful thing about the whole deal is that the price of the complete outfit was hardly more than what it would have cost us to rent other equipment."

And Mr. Wood's experience is, by no means, different or unique, for many other producers and cameramen have discovered the economy, the quality and the versatility of the Arriflex 35. No more easily manageable camera exists anywhere. Yet, it has every facility and convenience for truly first-rate filming.

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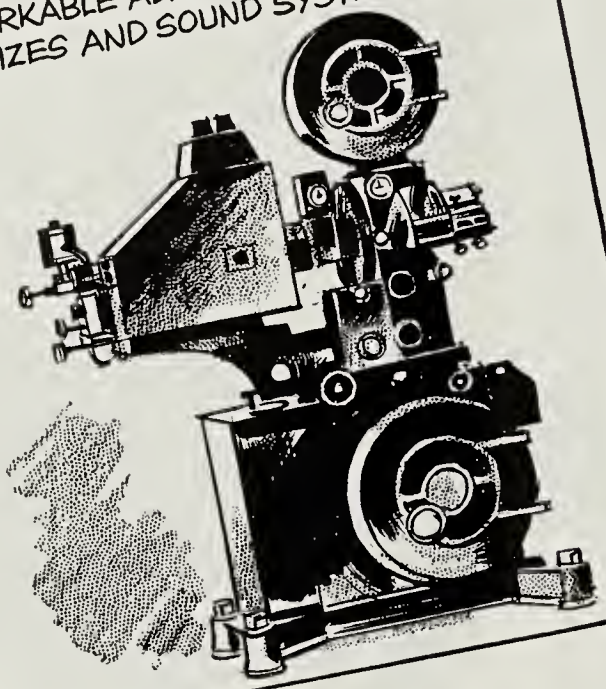
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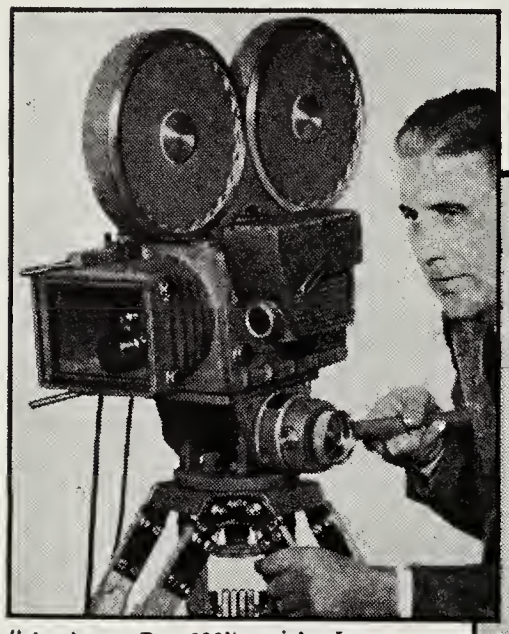
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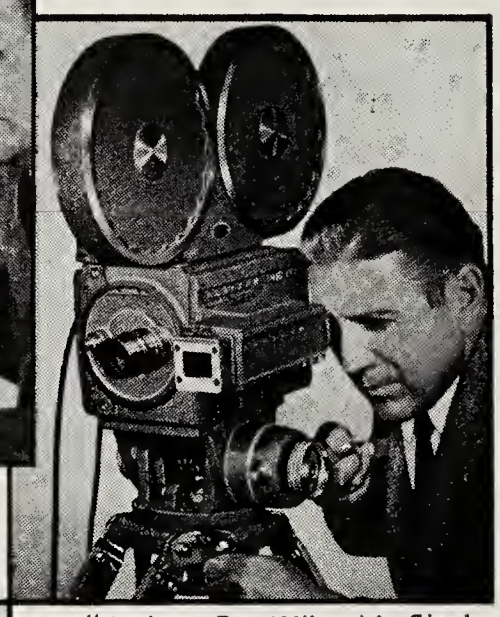
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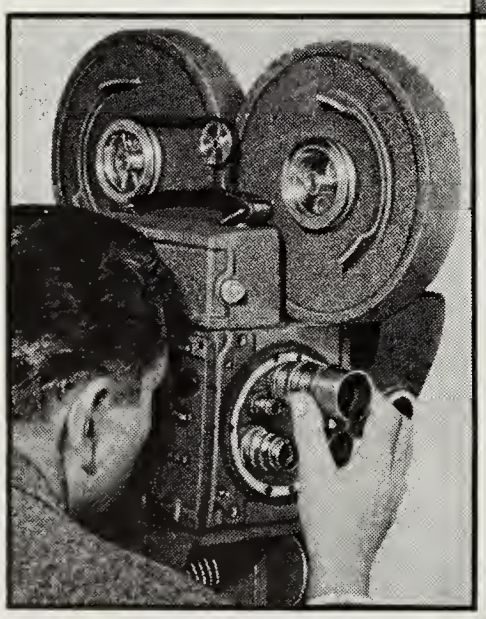


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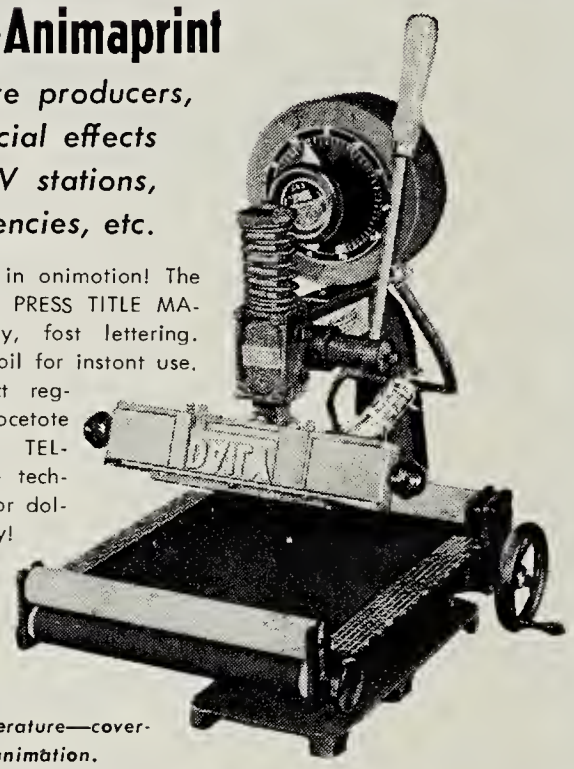
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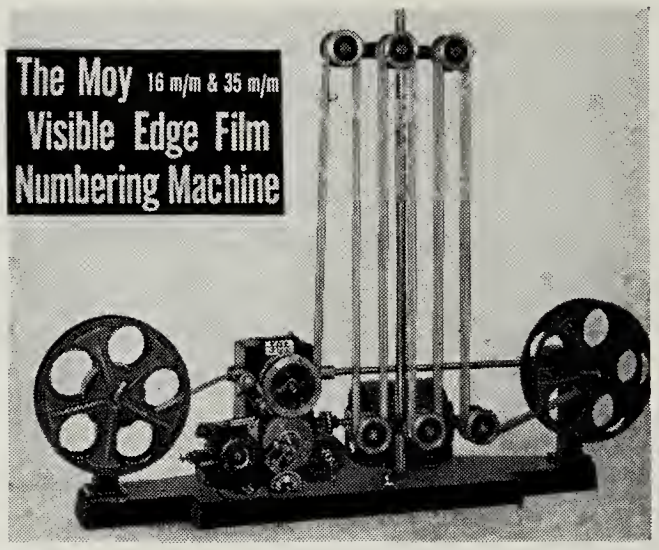
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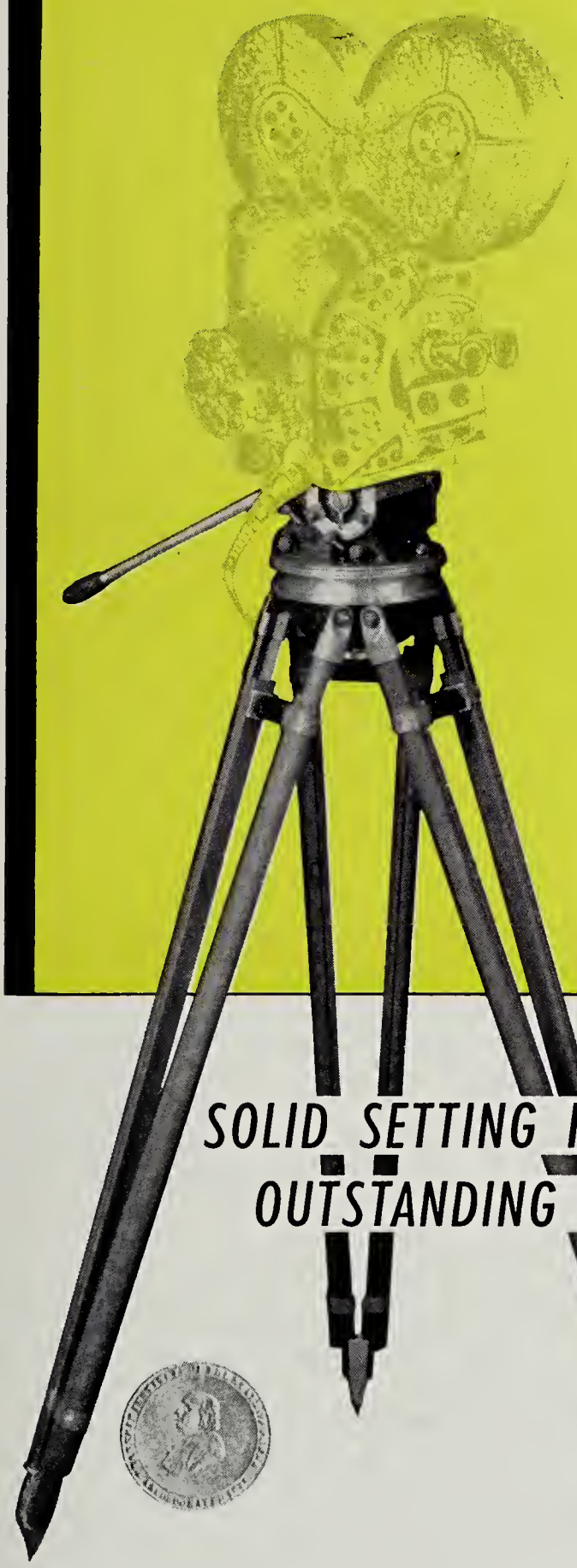
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THIS SCENE of 1,000 stampeding wild buffalo in a single thundering herd required months of planning, two days of setting up camera positions, ten hours of rounding up the buffalo, and two minutes to shoot for M-G-M's "The Last Hunt."

FILMING "THE LAST HUNT"

By RUSSELL HARLAN, A.S.C.



THIS IS CAMERA shelter from which above scene was filmed. Director Richard Brooks gives last minute instructions to camera crew headed by director of photography Russell Harlan, A.S.C., out of sight behind the camera. Heavy timbered shelter was pre-tested to support 4,000 pounds, and camouflaged to deceive the onrushing herd.

ONE THOUSAND WILD buffalo stampeded straight toward me, and directly over me. That was something I never expected to experience in this lifetime, not and still be around to tell about it.

Fortunately, I was sheltered beneath a roof pre-tested to support 4,000 pounds. (A mature bull buffalo weighs between 2,000 and 3,000 pounds.)

Snug as a gopher in a hole, I had the rodent's eye view of as spectacular a scene as man has witnessed.

Our "shooting" of the mighty buffalo —the American bison—came about during the filming of "The Last Hunt." Robert Taylor, Stewart Granger, Lloyd Nolan, Debra Paget and Russ Tamblyn are the stars, although the 1,000 buffalo will give them a race for laurels.

A story of the rugged hunters who pursued and ultimately wiped out the last of the great buffalo herds roaming North America in the early 1880s, it naturally took us in this day of movie realism to the stamping grounds of the largest herd now to be found in the

U.S. This was in Custer State Park in the Black Hills of South Dakota, the same locale where the buffalo once faced near extinction.

When the subject of the picture first came up at M-G-M, Director Richard Brooks and a few of us to be concerned with the production made a preliminary trip to the Black Hills. Our objective was to learn whether or not the scenes called for—such as the stampede and others depicting an actual hunt—were possible.

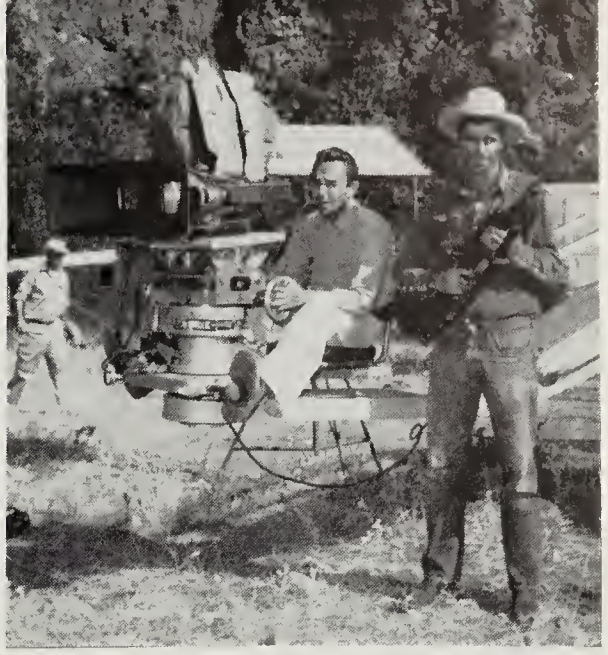
We learned, from the best of local sources, that they *might* be possible, and they most certainly would be difficult. Nothing like them ever had been attempted. (Since, the location filming of these sequences has been called the most physically challenging ever undertaken by a film production crew within the U.S.)

Park officials said they thought they could round up a herd of the size we wanted from the nearly 1,500 roving the State reserve. That hadn't been done before, either.

Anybody else photographing the buffalo, we were told, just went out to wherever the bison were doing whatever comes naturally, and made their pictures on the spot.

For our scenes, we knew the buffalo would have to be brought to a previously designated point, and then somehow induced to follow the action outlined in our script. Like the single paragraph

(Continued on Page 172)



WHERE CAMERAS filmed buffalo scenes out in open, an expert rifleman stood by to ward off any animals charging the camera.



MARKSMAN with pistol, at right of camera crew, fires gun at intervals to ward off animals as the stampede is photographed from one of four carefully planned positions.



READYING THE CAMERAS for the big stampede. One Mitchell camera is being set up in the steel reinforced pit. The other, an Eclair Camerette, is being mounted in tree at right.



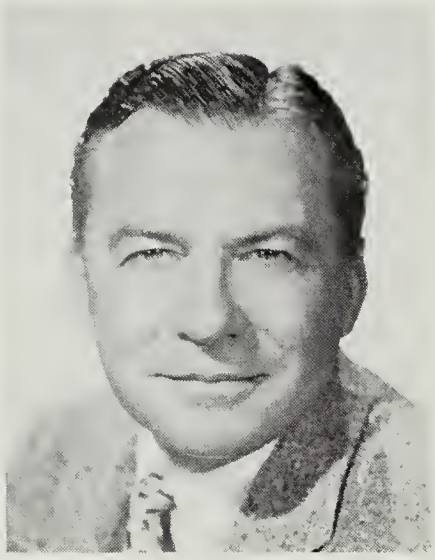
TWO MITCHELL cameras set up just inside game preserve enclosure shoot scenes of small buffalo herd which precede the big stampede sequence. Here, gunmen stand by to protect camera crew.



M-G-M's mobile camera unit moves in on a herd of buffalo in Custer State Park, South Dakota. In filming the stampede, all four camera crews were in communication by radio.



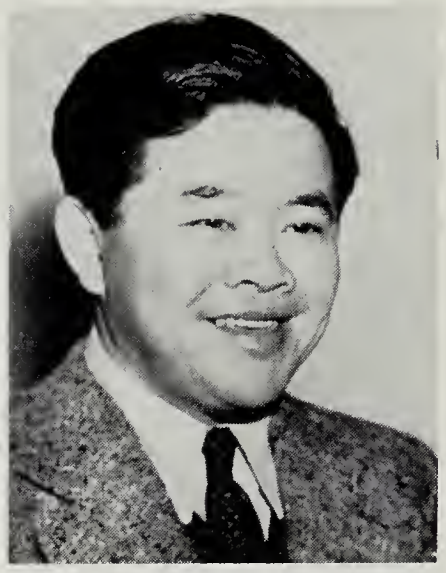
ARTHUR ARLING, ASC
"I'll Cry Tomorrow"



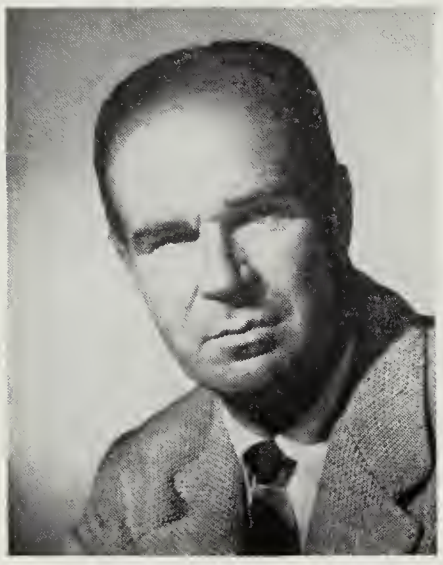
ROBERT BURKS, ASC
"To Catch A Thief"



RUSSELL HARLAN, ASC
"Blackboard Jungle"



JAMES WONG HOWE, ASC
"The Rose Tattoo"



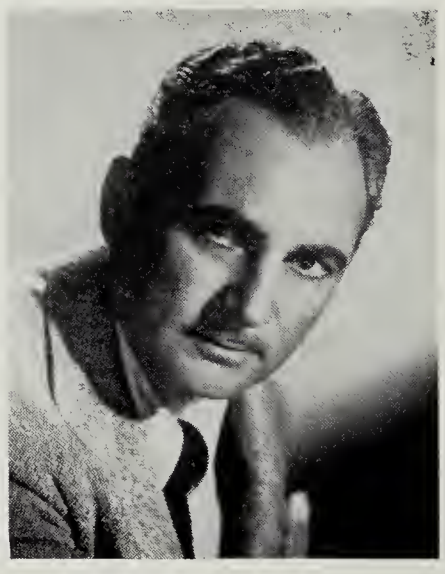
CHARLES LANG, ASC
"Queen Bee"



JOSEPH LaSHELLE, ASC
"Marty"



HAROLD LIPSTEIN, ASC
"A Man Called Peter"



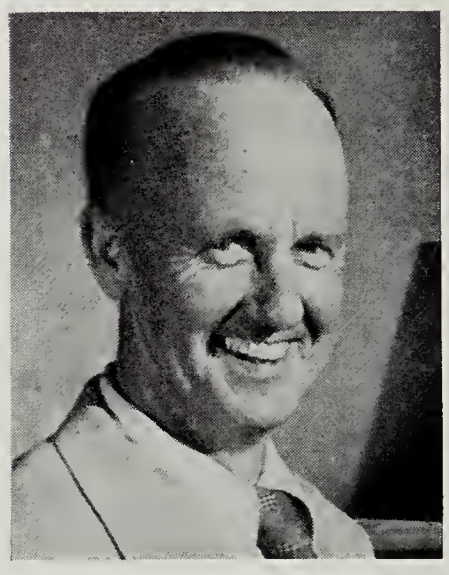
LEON SHAMROY, ASC
"Love is Many Splendored Thing"

"OSCAR" NOMINEES

for the best cinematography of 1955



HARRY STRADLING, ASC
"Guys and Dolls"



ROBERT SURTEES, ASC
"Oklahoma!"

CANDIDATES FOR Academy Awards for best achievement in films produced during 1955 were announced in a nation-wide telecast from Hollywood the evening of February 18th. Early in the hour-long presentation the ten nominees for best photographic achievement were named and most of them were present before the television cameras that gave the nation's video fans a glimpse of the men who photographed some of the most outstanding films released in theatres during 1955.

While technically it is the motion picture productions that are nominated for awards in the category of photographic achievement, when it comes to the presentation of the awards—the gold "Oscar statuettes—these are made to the directors of photography who photographed the award-winning films.

Five black-and-white and five color productions completed and released during 1955 have been nominated for "The best achievement in cinematography," as prescribed in the Academy's voting procedure. The productions and the

(Continued on Page 178)

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"EMMY" AWARD NOMINEES

For best achievement in cinematography of a Television Film Series produced and released in 1955.

By JOHN FORBES

WITH MORE CAMERAMEN engaged in photographing television films than theatre film productions, the annual Emmy Award of the Academy of Television Arts and Sciences looms as important as the film industry's Oscar, at least in the eyes of cinematographers. Last month, the TV Academy nominated five video film programs produced during 1955 as contenders for the Emmy Award for best Cinematography. They are:

"Dragnet," photographed by Edward Colman, A.S.C.

"Four Star Playhouse," (The Collar), photographed by George Diskant, A.S.C.

"Loretta Young Show," (I Remember The Rani), photographed by Norbert Brodine, A.S.C.

"Medic," (Black Friday), photographed by William Sickner, A.S.C.

"Private Secretary," photographed by Robert Pittack. A.S.C.

As in the case of the film industry's Oscar awards for achievement in cinematography, it is the television film series or a specific film within a series that is nominated for the award, with the cinematographer actually receiving the award.

Last year, which is the first time that the TV Academy made an award for cinematography, the Emmy for best cinematographic achievement went to Lester Shorr, A.S.C., for the photography of "I Climb the Stairs," a film in the Medic series produced and released during 1954.

Members of the Academy of television Arts and Sciences will now ballot to select the one best photographic achievement among the five nominees named above as well as the top achievements in 40 other categories ranging from Best Acting to Best Variety Show.

Don DeFore, president of the Academy, has annouunced that awarding of the Emmy statuettes to the winners will take place the evening of March 17th at the Pan Pacific Auditorium in Hollywood, with eastern presentations taking place at the Waldorf-Astoria in New York.

The event will be telecast over NBC-TV beginning at 6 p.m. EST.



1955 EMMY AWARD NOMINEES

FOR BEST TV FILM PHOTOGRAPHY

DRAGNET
Photographed by Edward Colman, ASC

FOUR STAR PLAYHOUSE
(The Collar)
Photographed by George Diskant, ASC

LORETTA YOUNG SHOW
(I Remember the Rani)
Photographed by Norbert Brodine, ASC

MEDIC
(Black Friday)
Photographed by William Sickner, ASC

PRIVATE SECRETARY
Photographed by Robert Pittack, ASC



EDW. COLMAN, ASC
"Dragnet"



GEO. DISKANT, ASC
"4-Star Playhouse"



NORBERT BRODINE, ASC.
"Loretta Young Show"



WM. SICKNER, ASC
"Medic"

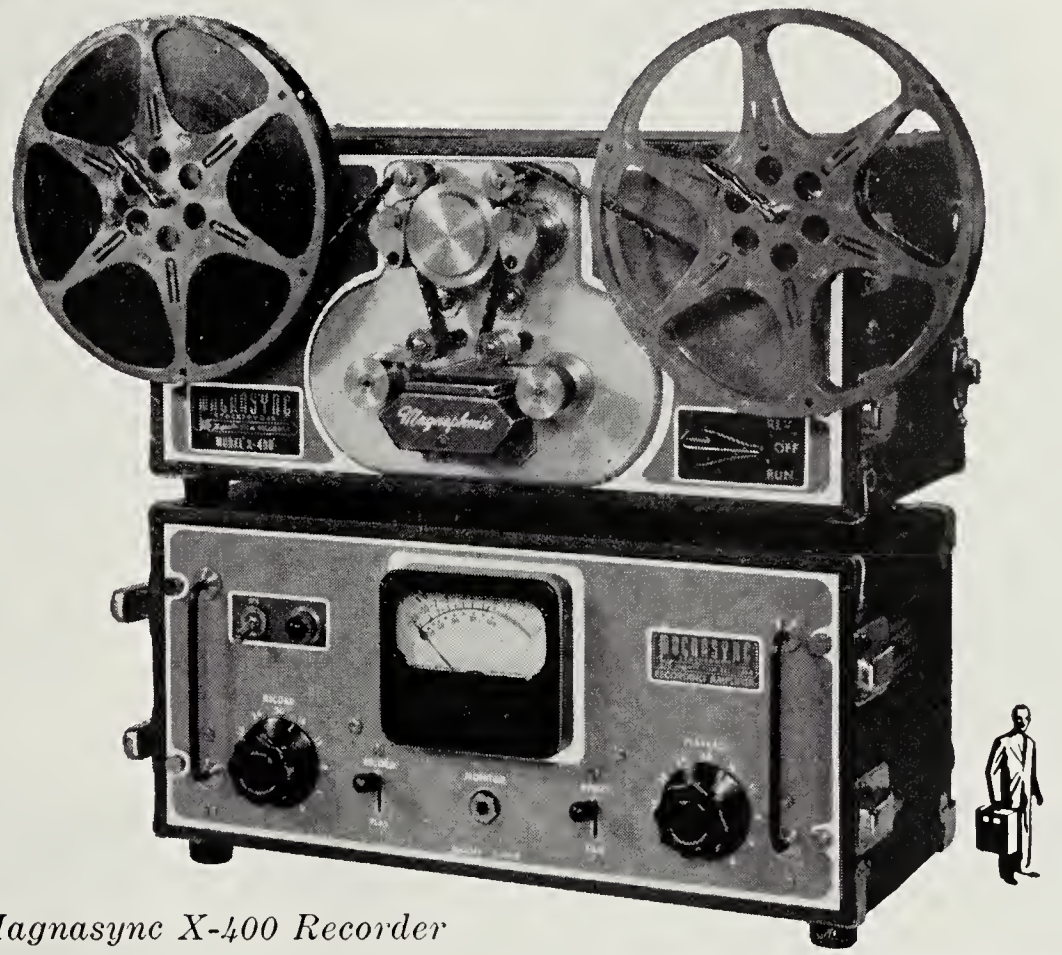


ROBT. PITTACK, ASC
"Private Secretary"



a complete

27-lb. sound system!



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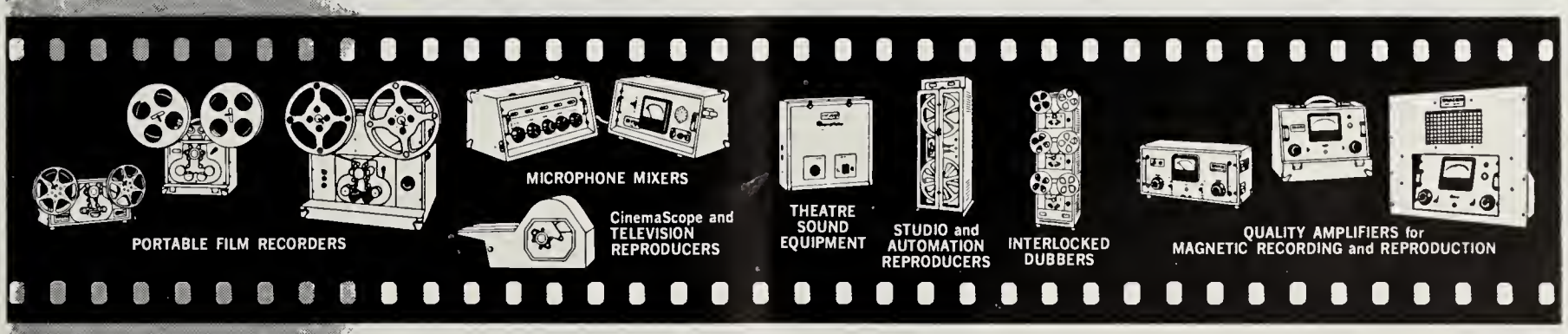
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Magnaphonic SOUND SYSTEM

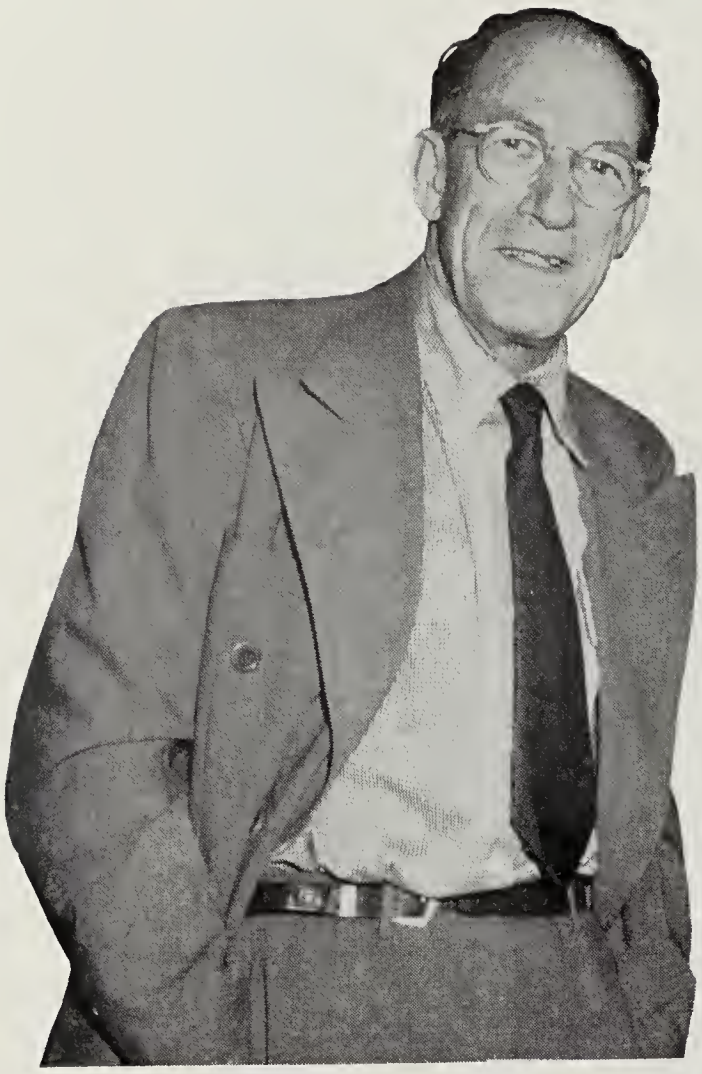
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CHICAGO—Zenith Cinema Service, Inc., 3252 Foster Ave., Chicago 25, Ill. IRving 8-2104.

SAN FRANCISCO—Brooks Camera Co., 45 Kearney St., San Francisco, Calif. EXbrook 2-7348.

CANADA—Alex L. Clark, Ltd., 3745 Bloor St., Toronto 18, Ontario. BElmont 1-3303.



ARTHUR MILLER, A.S.C.: "Electronicam's parallax-free finder is a major improvement."



INSIDE BLIMP of this Electronicam unit is a standard Mitchell 35mm camera with 4-lens turret. Light entering taking lens is divided and sent along separate path to standard electronic pickup unit at right, which provides the parallax-free viewfinder image and also images on preview monitors in the control room.



SHOOTING the Jackie Gleason show. Here three Electronicam 35mm cameras are recording the action simultaneously. The image picked up by each camera is relayed to preview monitors in control room.

Arthur Miller Looks At Electronicam

By ARTHUR MILLER, A.S.C.,

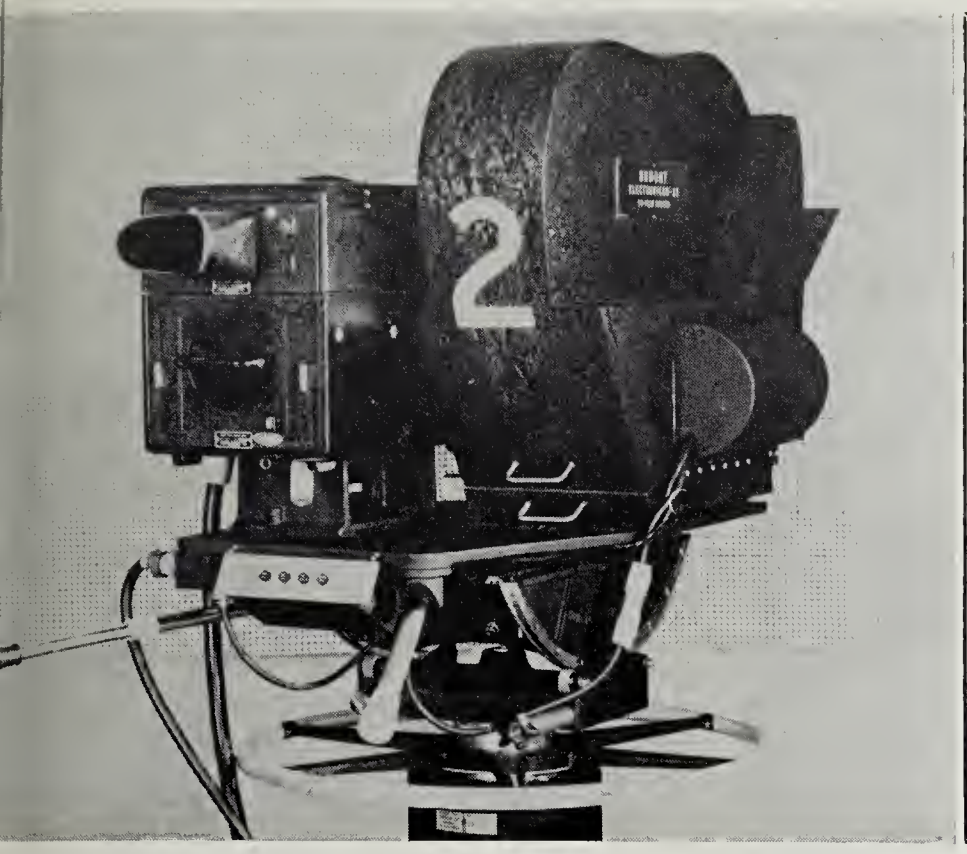
President, American Society of Cinematographers

FOLLOWING THE announcement by the Allen B. Du Mont Laboratories, Inc., that the company planned to introduce its Electronicam system of T.V film production on the West Coast early this year, I accepted an invitation from the company to visit New York to observe the system in actual use in the filming of "The Honeymooners," weekly television show produced by Jackie Gleason under the photographic direction of Jack Etra.

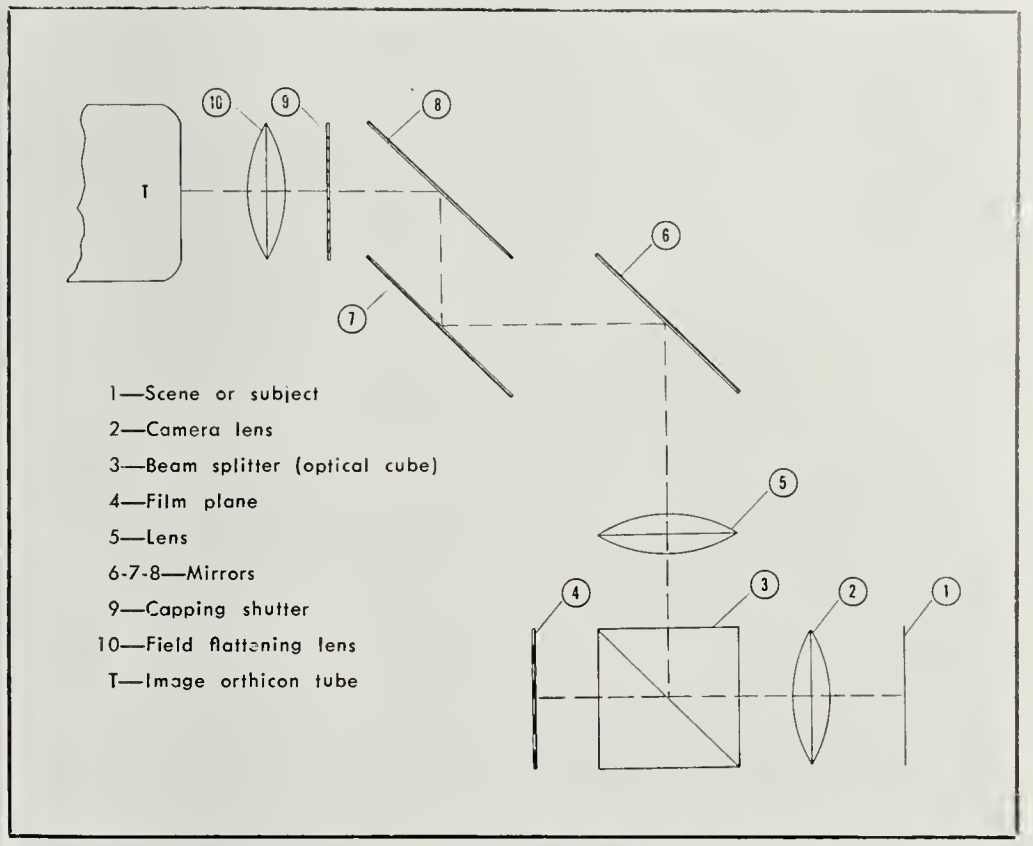
The Electronicam system was explained to readers in the May and October 1955 issues of the American Cinematographer. Therefore, it is not the purpose of this article to discuss the methods of motion picture production except to say that this show is filmed using the multiple camera method as is "I Love Lucy," "Our Miss Brooks," "The Phil Silvers Show," and others.

Usually three Electronicam cameras are operating simultaneously photographing the action in long, medium and closeup shots. It is my aim to describe the camera technically and what can be achieved by its use.

The Du Mont "Electronicam" camera is basically a standard Mitchell camera with a turret of four lenses: a 35mm, 50mm, 75mm, and 100mm. The operator can switch lenses by simply turning a lever at the back of the camera. He can also stop or start the camera during a take. By use of a beam splitter,



REAR VIEW of Electronicam camera. The Mitchell camera in blimp is at right. Here may be seen the hooded electronic finder, also the lens selector lever at rear of electronic unit. Three such cameras are currently in use in filming "The Honeymooners," half-hour TV film series produced in New York by Jackie Gleason.



SIMPLIFIED optical diagram of the Electronicam-35 camera, showing how the image picked up by taking lens is split by optical cube or "beam splitter" and diverted to the electronic unit, which reproduces it on the electronic viewfinder and the preview monitors. Optical cubes are interchangeable to accommodate different films.



CONTROL ROOM, showing the three preview monitors plus "line" monitor at far left. Here director of photography can talk to operators and position each camera for scene to be photographed.



PICTURE on "line" monitor is the take selected for kinescoping, will be included in finally edited version of the show. Effects are added to kinescope electronically, duplicated in edited film.

the image that is being exposed on the film is electronically shown in the finder, and as many monitors as desired can be placed at convenient spots. The finder picture is bright, clear and about 3¼ x 4¼ inches in size. There is no parallax because the finder image is taken from the photographic lens. If an anamorphic lens is used in photographing, as in CinemaScope, the squeezed image that is exposed on the film can be unsqueezed electronically in the viewfinder, as well as in all viewing monitors. It will appear in the same proportions or ratio as would be seen in the theatre. Whether a fast film like Tri-X or a color film requiring five times the light is used, the amount of light required for the electronic image in the finder remains the same, about 80 ft. candles. Therefore, there is a choice of beam splitters of different degrees of light transmission from 50-50 to 90-10. Any type of film can be accommodated simply by changing the beam splitter, which is accomplished in a few minutes. All of the optics, including the beam splitters, are coated.

The photographing lens can be focused visually through the finder from the back of the camera, or on a monitor by remote control or at the side of the camera by use of a knob turned manually to register on a footage scale.

The camera is provided with cut-off

(Continued on Page 176)



THE BRIGHTEST of all incandescent lamps is explained to actress Dani Crayne by Sylvania engineer Richard H. Lindberg (left). Powered by radio frequency energy instead of AC current, lamp emits bright, uniform light especially suitable for use in motion picture film printing. Looking on is Jack Thomas, head of Universal-International's special photographic effects department. Miss Crayne holds duplicate of lamp shown mounted in printer lamphouse (center).

Brightest Incandescent Lamp Powered By Radio Impulses

Potentially a new and promising set lighting source, lamp is already in use for printing motion picture films in Hollywood

By CHARLES LORING

THE MOTION PICTURE industry now can increase the speed of critical film printing operations up to eight times faster than is now possible using conventional methods, thanks to a new lamp that transforms radio impulses into light so brilliant that it is brighter than any incandescant lamp ever devised. The lamp uses the same type of radio signal that transmits sound to radio and television receivers, and is not connected by wires to the source of its activating energy.

Known as the RF (Radio Frequency) lamp, it was originally designed by engineers of Sylvania Electric Products, Inc., in cooperation with the Motion Picture Research Council in Hollywood, to overcome a number of motion picture problems. The RF lamp can also be used in color television tube processing, medical research, radar and air traffic control, computers, film projectors and many other fields.

The RF lamp was introduced last month at a news conference of eastern motion picture executives, television leaders and representatives of various publicity media at the Hotel Vanderbilt by George C. Connor, general sales manager of Sylvania's photolamp division, who explained that it provides a concentrated and uniform source of light — so concentrated that nearly all the light produced by the lamp is usable.

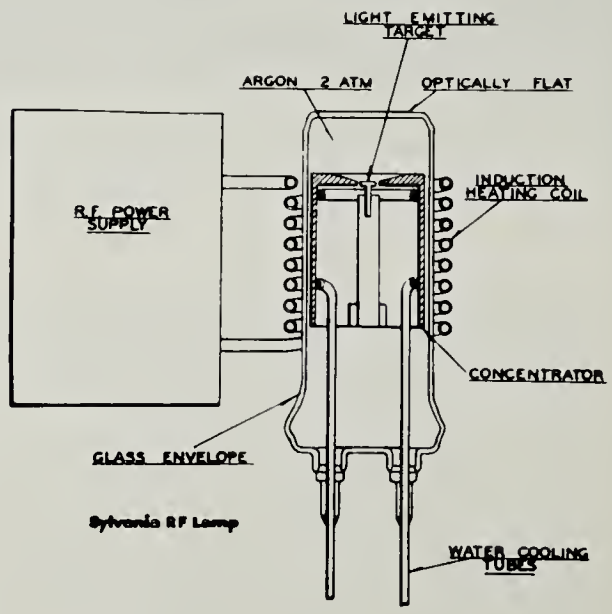
Immediate advantage of these characteristics of the RF lamp is being taken by the motion picture industry which is already using the lamp in film printing operations.

The speed with which Hollywood can now print films is limited by the mechanical speed at which the film can be run through the printing equipment rather than by the quantity of light available. In addition to these substantial savings in time in film printing, the uniformity of RF illumination has resulted in a noticeable improvement in the quality of the print.

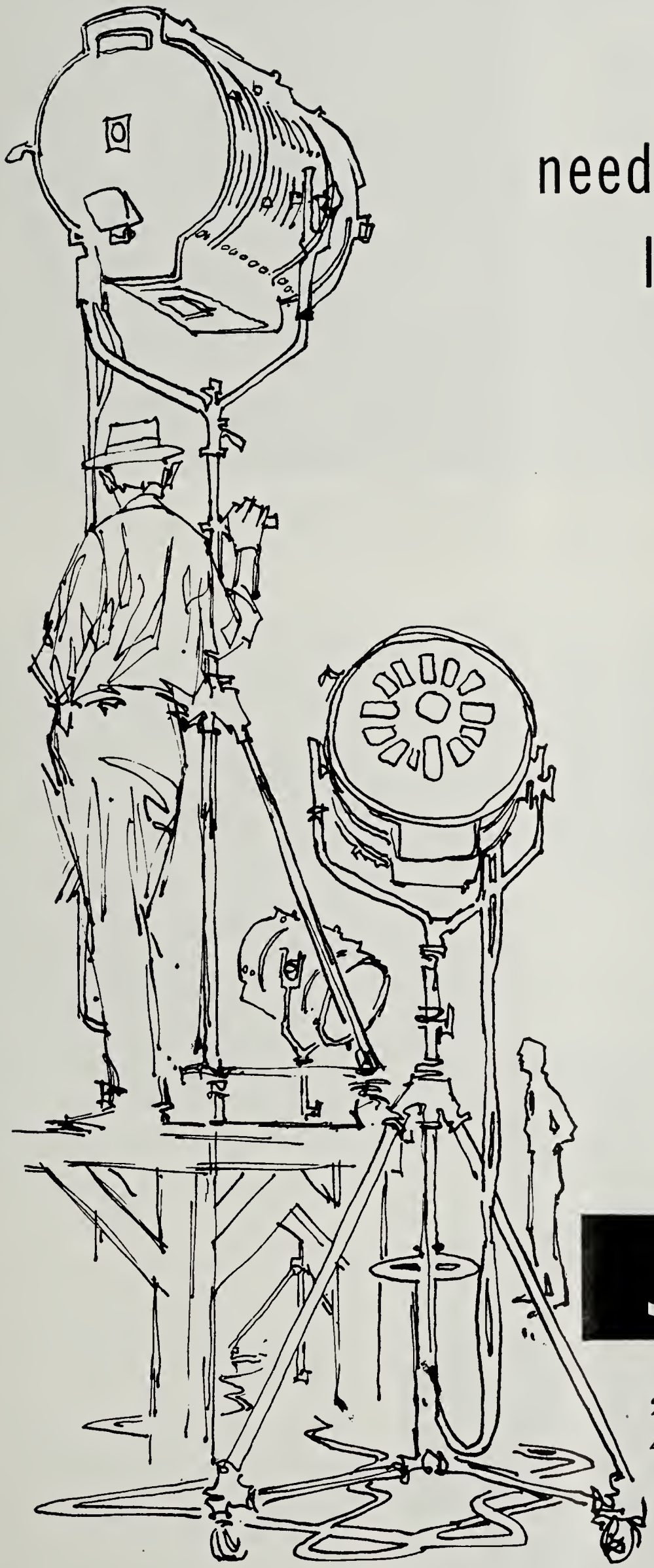
First commercial installation of the RF lamp was made by Consolidated Film Industries. According to E. H. Reichard, chief engineer of Consolidated, the use of the light source in optical printing equipment resulted in increased uniformity of field, exceptional increase in light output, and greater lamp life. Eventual conversion of all optical printing equipment to RF light is predicted by Carl Hauge, quality control engineer for Consolidated. Mr. Hauge said he believed that the present usage of RF for color separations and negatives is only the initial stage in wide-spread laboratory applications.

Sylvania engineers now are working on the possibility of employing the RF lamp for studio set lighting. They point out that with the advent of wide-screen color motion pictures, many times more light is needed in filming to gain the

(Continued on Page 182)



CROSSECTION diagram of the new Sylvania RF lamp pictured above. Lamp is water-cooled.



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"We dared to do what others have seldom attempted in lighting and camera treatment to give 'Giant' the powerful, dramatic scope of the original novel," says William Mellor, A.S.C.



THE ROOMS of the Victorian Texas mansion change during the 30 years covered by the story, and each change involved a change in set lighting also. Here illumination is from overhead . . .

By ARTHUR ROWAN

AS THE TREND toward bigness in film productions continues in Hollywood, there is a marked trend also toward a bolder concept of photography. Today, the director of photography assumes an even more important role as the pictorial interpreter of screen stories, according to William Mellor, A.S.C., who recently completed the filming of George Stevens' WarnerColor production, "Giant."

"The director of photography today must aim for a fresh, new approach in planning the photography of a feature production if the photography is to make its full contribution," says Mellor. "In the case of 'Giant'," he said, "George Stevens made it plain in the very beginning that he didn't want ordinary photography, but a bold and striking pictorial treatment in keeping with the theme of the story. In 'Giant,' Stevens had the kind of broad canvas, incisive characterizations and strong story line which have made his other films memorable masterpieces."

TYPICAL of William Mellor's pursuit of the "daringly different" in the photography of "Giant" is seen in this Texas location setup with the Mitchell camera shooting almost directly into the sun for a unique lighting effect. Mellor is seated on high chair, second from left. In foreground is actor James Dean, and at his left, director George Stevens.



The story covers approximately 30 years in the lives of its characters, from 1923 to the present. A Texan, owner of a half-million acre cattle ranch, goes to Maryland to buy a black stallion. He meets a girl, romantic and strong-willed. They marry and return to Texas.

Many things happen and there are many clashes. A stubborn spinster runs the ranch until she is killed in a fall from a horse. There's a violent young ranch hand, played by the late James Dean, who wants to make a million dollars. Eventually he makes a hundred million. Most of it from oil. But vast wealth and gushing oil only bring bitterness and fighting, separation and yet constant love.

Shooting of the picture started on location, in Virginia. One of Hollywood's biggest logistics maneuvers was the transportation of personnel, cameras and lighting equipment—first to Virginia and then to Texas. In the picturesque country around Charlottesville, Virginia, were filmed the scenes of the Texan's arrival in the south. From here the "Giant" company moved to Marfa, headquarters for the Texas location shooting.

The ranch house, a magnificent three-story Victorian structure, was built in the Warner Brothers' prop department and then shipped to the Worth Evans Ranch, 21 miles out of Marfa. Stevens selected a completely isolated site on the ranch for the erection of the mansion. The only exteriors not filmed in Texas



. . . ostensibly supplied by the large chandelier shown here in this view of the balcony area of the same room. Set also included ceiling which posed additional lighting problems.



DEN where injured girl lies dying is lit in low contrast to point up poignancy of situation, while maximum lighting is concentrated on large painting in background.



TYPICAL "day-for-night" scene of exterior of Texas mansion. While photo shows the lighting treatment, effect of night is more realistic in the motion picture film.



LOW CAMERA angle produced ideal composition for scene showing young Texan's lone wildcat oil well "blowing in," with rig contrasting powerfully against vast cloud-flecked sky area.

were Jett Rink's hotel and airport. "For these sequences," said Mellor, "we used the Los Angeles Statler Hotel and the Lockheed Airport in Burbank. In all, we were on the production five months."

Mellor's earlier experience with director Stevens made his selection as director of photography of "Giant" inevitable. It was Mellor who photographed Steven's "A Place In The Sun," for which Mellor received an Academy Award. The fact Stevens was once a cinematographer himself, makes him a strong taskmaster on any production, yet a director who, knowing the cameraman's problems, retains a completely open mind on suggestions offered by his cinematographer.

Mellor found inspiration in Stevens' ideas for creating dramatically pictorial contrast between one scene and another or between related sequences. One outstanding example is when two sons return from the war in Korea. One, a hero, is met by a happy, gay crowd. This sequence was photographed in appropriate gay mood. The other son, a casualty, is returned in a coffin to be buried in the family cemetery. This sequence was purposely photographed late in the afternoon to take advantage of the quiet, solemn effect of approaching dusk and thus point up the sadness of the occasion. The burial sequence, photographed the following day, was also shot late in the afternoon, between 4 and 8 PM, when it was possible to capture the quiet, "vesper-hour" quality

(Continued on Page 174)

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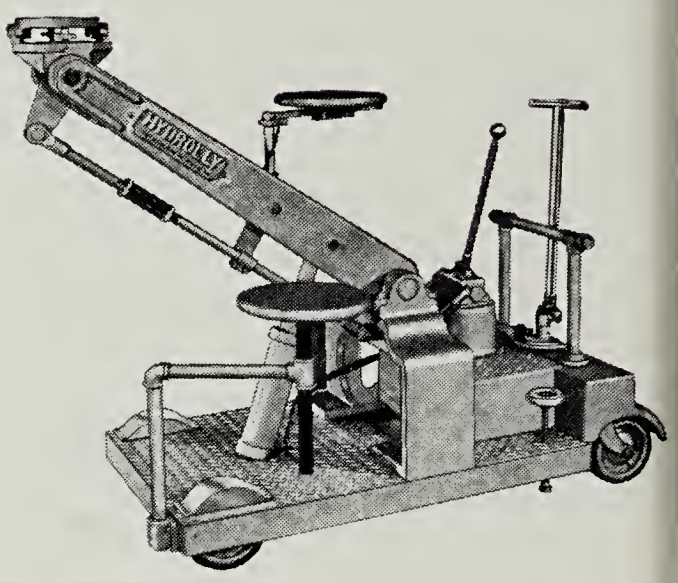
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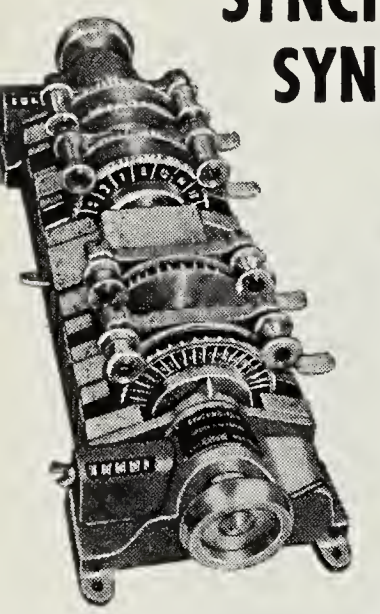
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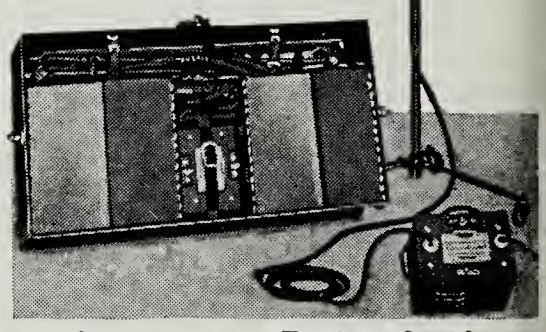
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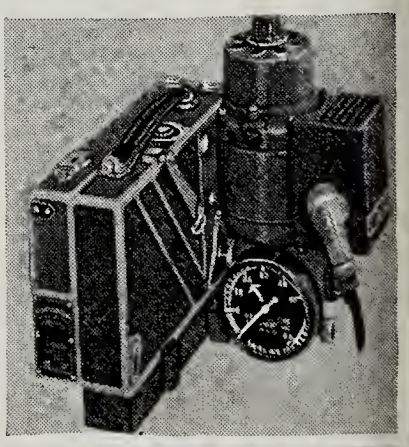
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News Sense, Perseverance Necessary For Newsreeling

A news cameraman's job is to get around, make friends and try to anticipate the next news flash, says veteran Norman W. Alley.

By LEIGH ALLEN



HEARST NEWSREELS veteran Norman W. Alley behind his favorite camera—a Parrish-converted 16mm Auricon. Although he heads Hearst's west coast division, he continues active as a cameraman, is always in search of a newsreel "scoop."

THE ASPIRING motion picture cameraman who yearns for a career as a newsreel photographer will profit by the experiences and observations of veteran cameraman Norman W. Alley, now Western Manager of Hearst Newsreels with offices in Los Angeles. Alley has been a newsreel man since 1916, and has been associated with Hearst for almost 40 years. His memorable camera coverage of the famed *Panay* incident in the Orient made him internationally famous overnight.

The newsreels, which until the advent of television, were essentially a theatrical product, have undergone marked changes in recent years. Television has had both a direct and indirect effect on the theatre newsreel: by directly affecting the boxoffice, as it did just a few years ago, television forced a marked change in theatre programming which, in many cases, all but eliminated the newsreel from programs of movie houses. Then, as television blossomed into a major industry, it introduced the television newsreel with its characteristic short but numerous subjects which in turn exerted a change in the makeup of the theatrical newsreel. Today, Alley observes, theatre newsreels consist of fewer stories, with more footage devoted to each to produce a more complete presentation of the subject.

All this has had its effect on the newsreel cameraman, points out Alley who began his newsreel career as a movie free-lance cameraman in Chicago in 1916. Today, more news footage is shot for television newsreels than for theatre newsreels, so that the news cameraman now has daily deadlines where it used to be weekly. The TV newsreel differs in format compared to the theatre newsreel which, after editing, will have from 12 to 15 subjects packed into 460 feet of film. Today's theatre newsreel stories are more completely documentary in character, thus more footage is devoted to each story than was the practice a few years ago. This means, says Alley, that today's newsreel cameraman must be first a news reporter and second a good photographer, capable of putting a story together in sequence as he shoots it. In Alley's opinion, the best background for a successful newsreel cameraman today is newspaper reporting and film editing experience. For this reason, he observes, the transition from theatre newsreel to TV newsreel photography has not been easy for many old time newsreel men lacking the newspaper experience that trains a man to see a story in its full continuity and to shoot it that way. The news photographer today must have, in addition to imagination and initiative, the determination to knock on doors, to "dig" to get results.

"Above all things," says Alley, "he must omit the phoney. It's too obvious."

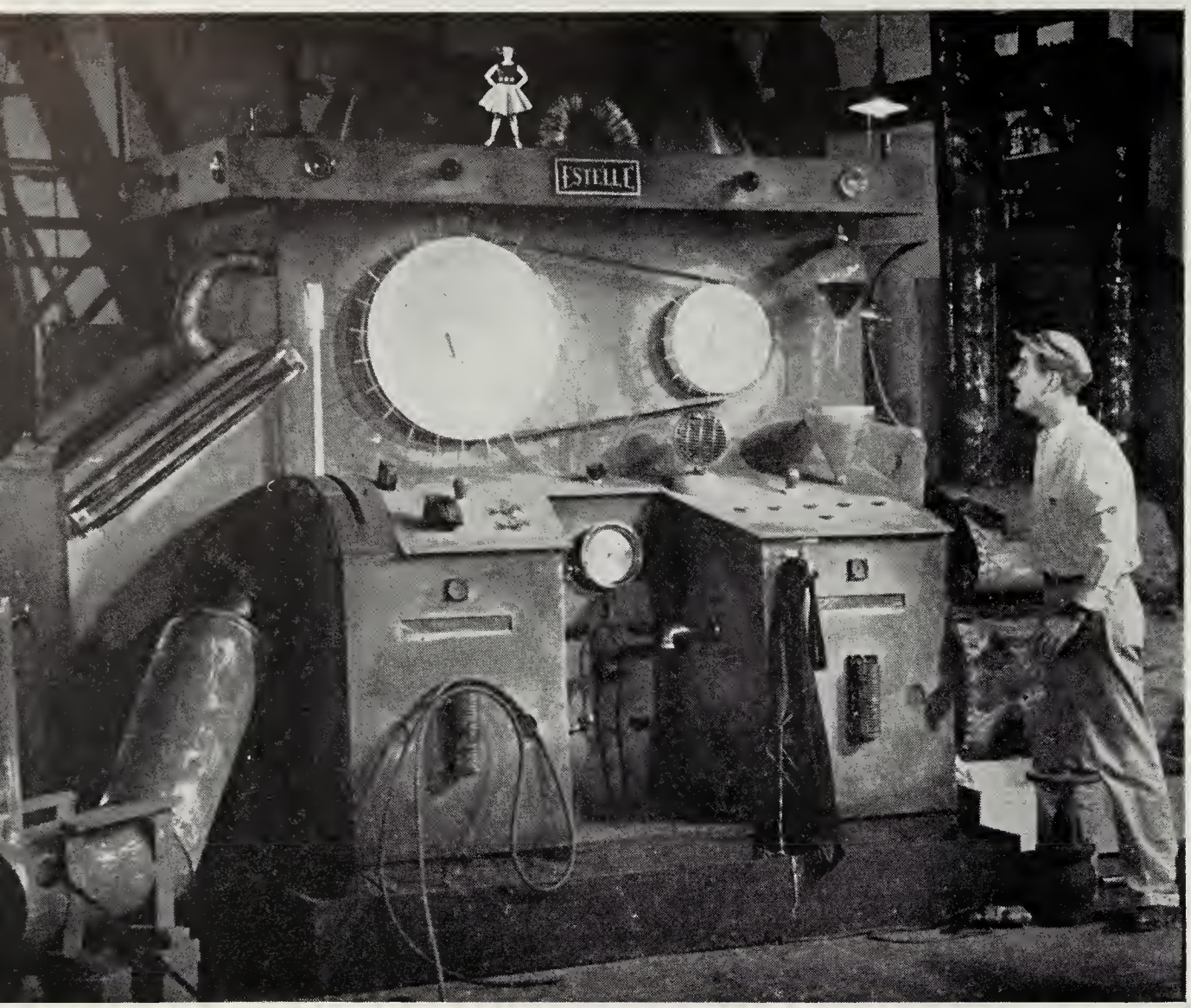
Alley and his staff use Tri-X negative exclusively. This super-speed film is a boon to newsreel photography and has greatly enlarged the scope of filming possibilities for the newsman. To permit its use in brightest daylight, suitable ND filters are employed to "reduce" its speed to approximately that of Plus-X and thus eliminate the need for taking exposure meter readings.

Newsreel photographers are trained early to judge exposures and to dispense with a meter, to expose all scenes so they are relatively uniform, so that they can be edited virtually as shot. This procedure is not so much for economy, points out Alley, as for gaining speed in preparing the newsreel for the screen.

Another important technique which a good newsreel cameraman develops is the ability to change focus and lens stop almost intuitively, often without even looking at the lens, as he moves from one setup to another on a fast assignment. This is especially important where the cameraman is shooting in a lobby one moment, then moves into another room for a succeeding shot, as when following an important person or a moving action.

Because Norman Alley's favorite assignment has always been football, he personally covers nearly all important grid games on the west coast. He has photographed every Rose Bowl game since inception of the annual event. For this assignment he dispenses with his favorite Parrish-converted 16mm Auricon in favor of a 35mm Wall camera equipped

(Continued on Page 176)



TYPICAL double-printed scene from the Centron Corp. production "Framble's Friend," produced for Spencer Chemical Co. Combined in the picture is "Estelle," the temperamental lollipop machine; Poly-Eth, the little trademark character; and a befuddled Harry Framble.

Systematic Control For Special Effects In 16mm Production

Technique developed by Centron Corporation's camera department simplifies execution of special effects through double-printing.

By HERK HARVEY and CHARLES LACEY

AN EFFICIENT SYSTEM for the analysis and notation of details in a particular scene can often be as important in shooting special effects as the camera work inself. This fact was brought to the attention of the Centron Corporation photographic department during the recent filming of a production for the Spencer Chemical Company entitled "Framble's Friend." This film is a combined entertainment and documentary exhibit of the uses of the new wonder plastic, polyethylene.

Spencer's registered trademark for their brand of the plastic is "Poly-Eth." As a character in previous advertising campaigns, "Poly-Eth" is pictured as a little plastic girl who can change size, go anyplace, and do almost anything. With such characteristics she would usually be shown in motion pictures by use of animation. However, in this plot "Poly-Eth" magically reduces a live character, Harvey Framble, to her size (approximately 8" tall) and takes him on a grand tour to show him the various uses of polyethylene plastic.

It was decided that the special effects called for in the script could best be obtained by using a live "Poly-Eth," costumed and made up to match the trademark character; and to obtain the desired special effects by double printing.

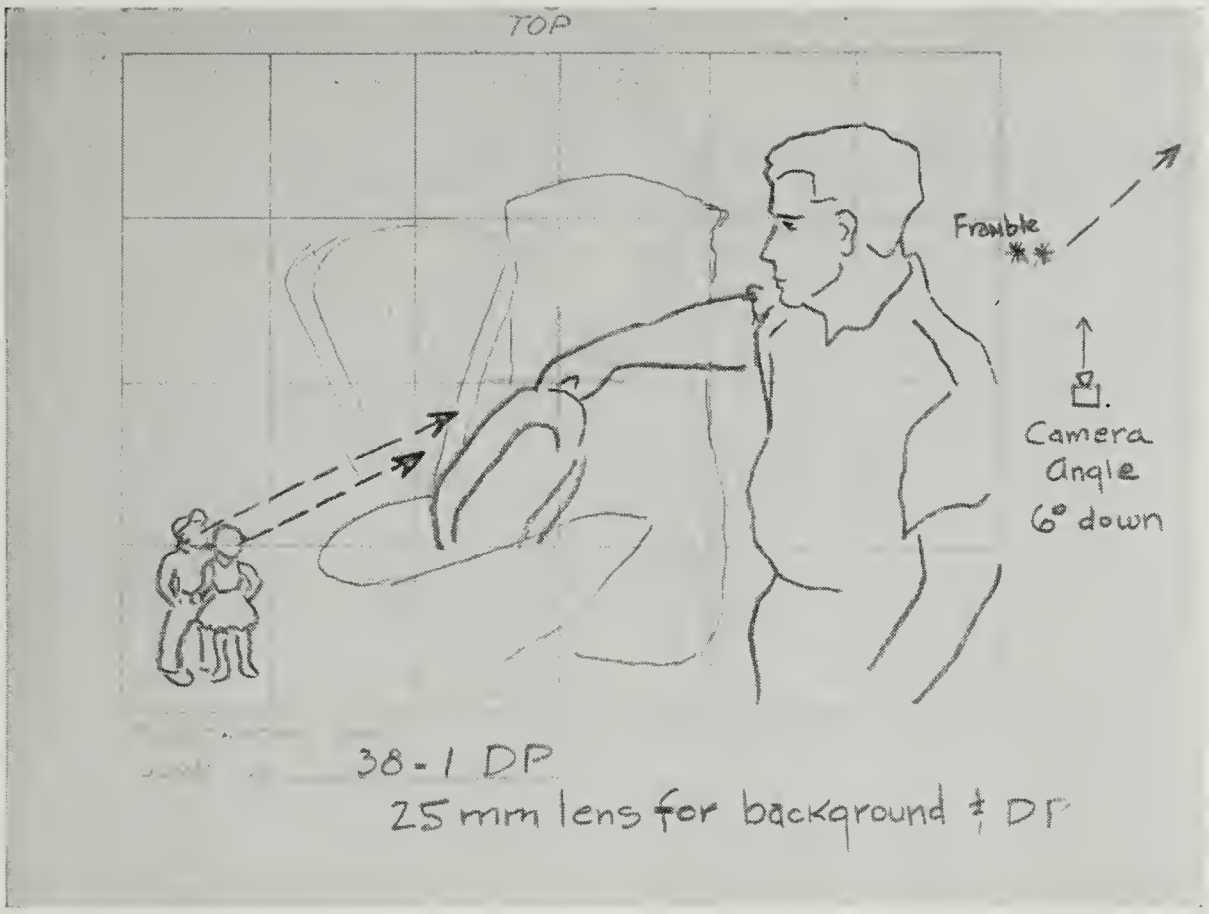
Basically there are two methods for obtaining this sort of effect in motion pictures: double-printing and double-exposure. Let's consider the double-exposure first.

Double-exposure has one inherent advantage. Double-exposed images are steadier that double-printed images. They are less lively to "jitter" on the screen. But, if double-exposure were to be used, it would be necessary to get the best takes of both exposures on the same piece of original film. Since there were lines to be delivered, this would present a serious problem. Imagine the chagrin of the camera crew and director at the prospect of having a bad take double-exposed over a good one, thus having to do both exposures over again.

If double-printing were to be used, it would be necessary to get only one good take of each exposure, since any exposure could be double-printed over any other. The printing light governing either part of the scene could be controlled individually, thus making original exposure requirements somewhat less critical. In editing, the two exposures could be slipped forward or backward with respect to each other, giving an opportunity to improve the cueing between the two parts of the completed picture. This would, of course, be impossible if double-exposure were to be used. The additional advantage of being able to pop on, pop off, fade in or fade out either of the exposures at any time during the scene clinched the decision. Double printing it would be!

A rather involved system of coordinate analysis and notation of details entered in when the script called for an eight inch "Poly-Eth" appearing at various positions on the sets, conversing in lip-sync with a full-sized Harvey Framble. This basic situation was further complicated by the various close-ups that were to action cut into this sequence.

At this point a cross-hatch grid was constructed that fitted over the ground glass in the through-the-lens finder of the Mitchell camera. This grid was made of cellulose acetate cut to the proportions of a 16mm frame. Twenty-four tiny rectangles were masked out on this grid, six wide and four high. This grid remained in the camera dur-





ABOVE is grid sheet used to register scene reproduced in film clipping at right. Here the small-size characters were photographed and sketched in first and the background shot later in an actual plant. The result of this double-photographed, double-printed scene is shown at right.

ing all the special effects shooting.

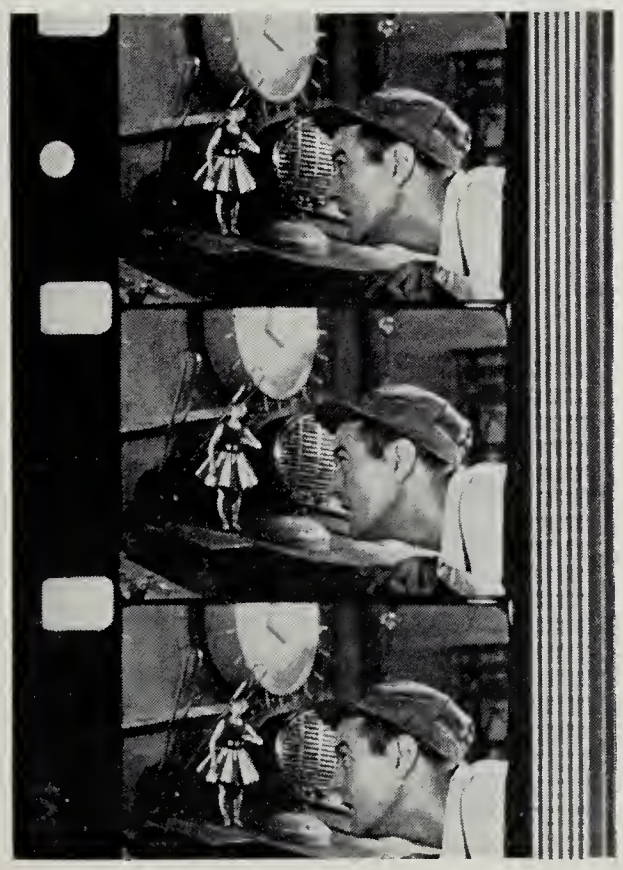
Normally the backgrounds were photographed first. As soon as the cameraman had a scene lined up he stepped back and allowed the artist to make a rough sketch of the scene on grid paper that also had twenty-four rectangles scaled to match those in the camera finder. The sketches were detailed as to the "critical position" where the double printing would occur. Points in the scene where eye registration or the actions of the actors were critical were also marked on the sketches.

Notes taken down with each sketch included the lens used, scene number, camera position and degree of vertical elevation, footage at which action cues occurred, and the overall scene length. The placement of lighting units and the use of colored gels were also listed.

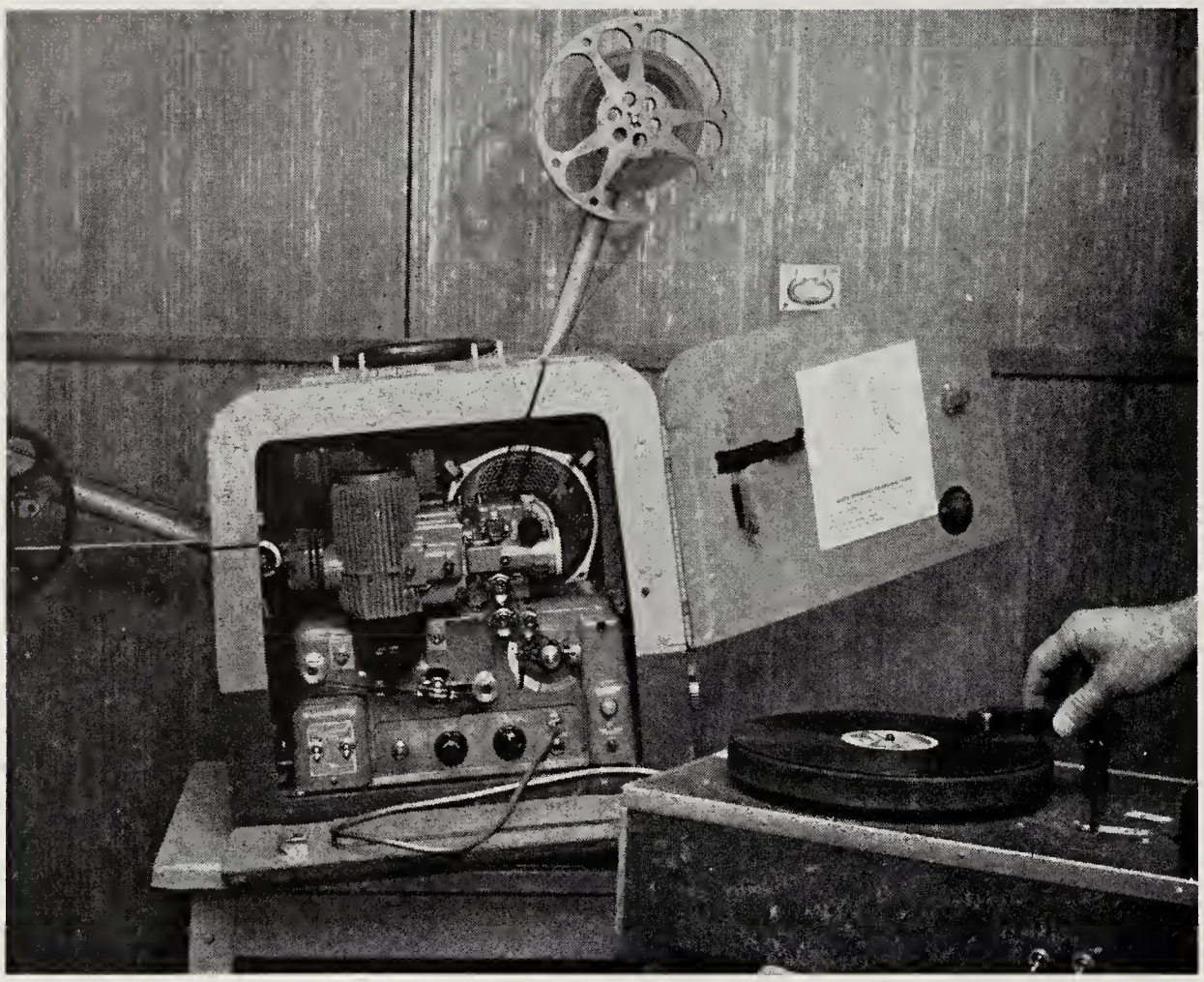
All of this recording of production detail was very important, for instance, if the background were photographed with the camera pointing 15 degrees below the horizontal and the actors were photographed with camera level; all the actors would appear to be leaning away from the camera. Unless this particular

(Continued on Page 178)

THE REGISTRATION guide for another sequence in "Frambles Friend" is shown below, at right, while the photographic result is represented by the film clip reproduced below, left. Here the background including the full-size character was shot first and sketched in. The diminuitive Poly-Eth was then shot and double-printed, using the sketch as a guide.







TRANSFERRING music from record to soundstriped film, using a Bell & Howell 202 magnetic recording projector. This re-recording step takes place while picture is being screened. Record turntable is plugged into phonograph jack of the projecter.

Platter Movies

Phonograph records suggest movie plots

By JOHN R. KRHEN

THE OWNER OF A tape recorder or magnetic stripe projector may now produce his own musicals on film—original musicals patterned to conform to favorite records. This type of amateur movie making my friend George Bunting appropriately named "Platter Movies."

Music instills moods and possesses the ability to sway emotions. Likewise, we can sway emotions and create moods with our motion pictures. Combine the two and it is readily apparent that the desired moods and swaying of emotions will be greatly amplified. Doubly, or more than doubly effective. I pondered over this one evening while enjoying some of my best phonograph records or "platters." It was then that I decided to try a musical movie just as soon as time permitted.

From my record collection I chose several favorites, stacked them on the phonograph, turned a few knobs, then stretched out in a comfortable chair. The records were smooth, restful — soothing. Music of this type has a relaxing and remedial effect. It tends to allay worries, problems, and accumulated tenseness after a particularly hectic day.

"Ebb Tide" was revolving on the turntable. I closed my eyes and began to picture the music. I tried to visualize what the composer and conductor undertook to effect. In my mind's eye I could see a light breeze moving palm tree branches, serene waves leap-frogging toward the beach — washing the shores. Cool, white surf spraying from shore rocks. Gulls leisurely gliding just above the rolling water, and bright dancing sunlight all around. It was refreshing. Inspiring. The mental pictures became so vivid, so real, that I could almost smell the ocean water. This I decided, I must endeavor to transfer on film to the best of my ability.

The squawking of the gulls faded into the distance and the sounds of surf pounding the beach slowly subsided. Thus the record of "Ebb Tide" ended. And with this conclusion came the exciting start of my first musical production.

Having decided upon my first selection for a Platter Movie, wave after wave of ideas flooded into my mind. Enthusiasm can be a mighty generator of ideas. From this mental deluge I

(Continued on Page 183)







THREE SCENES from author's platter movie "Ebb Tide," for which musical number by same title furnished pictorial plot for the film. Main title and screen credits were superimposed over a live scene. Center photo shows subject of story fishing, and in last scene, stepping across words "The End" scratched in wet sand. Subsequently a wave washes up and over letters.

CLOSE YOUR EYES . . . and dream into our picture softer, more natural colors than you ever thought possible . . .



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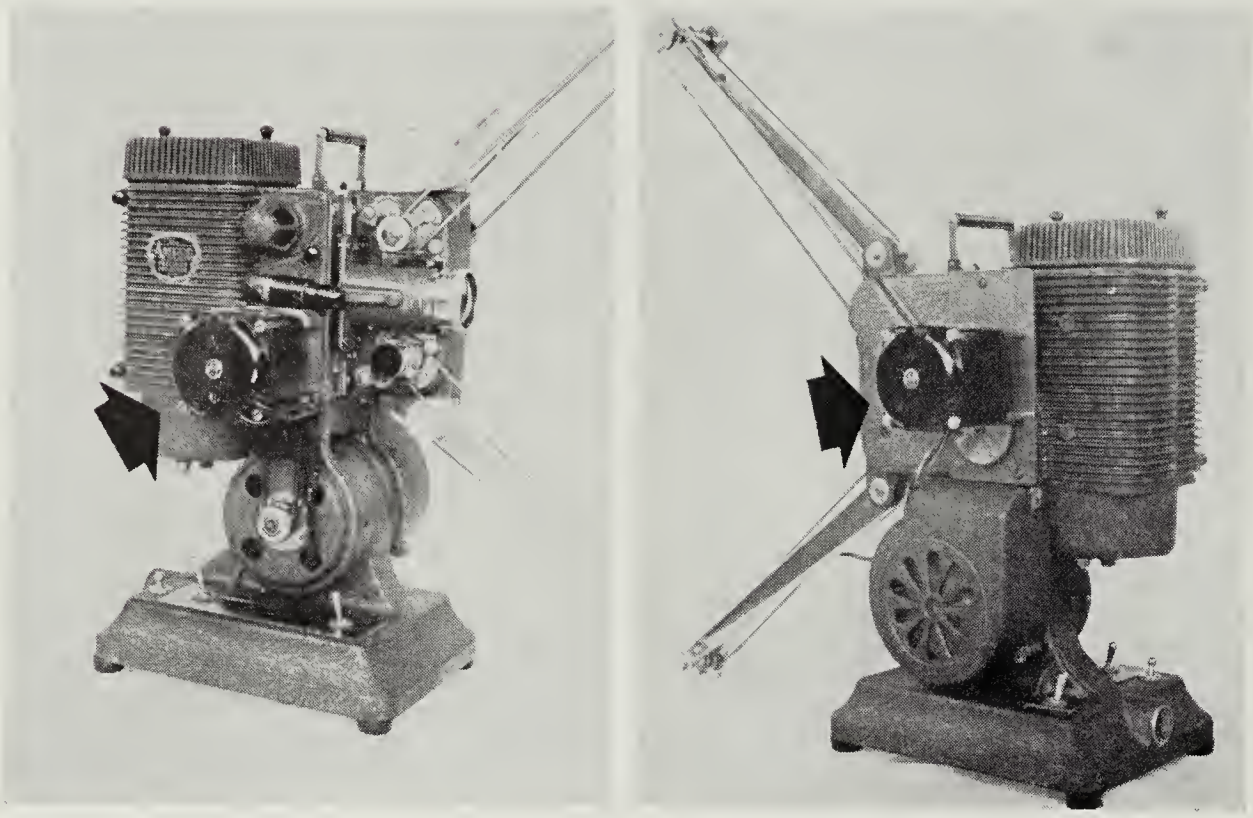


FIG. 1—Above photos show two methods for mounting synchronizing motor (arrows) on model KD Ampro projector, a necessary step in undertaking the method of producing synchronized sound for 8mm and 16mm films described by the author in article concluded in this issue.

Coincident Sound For Home Movies

PART 2

By JAMES N. WHITAKER
Technical Staff, Hughes Aircraft Company

IN THE FIRST part of this article, which appeared in last month's issue, I illustrated and described a unique method for producing synchronized sound for home movie films, regardless of the make or type of projector used. The method involves the use of a sync motor on the projector and an ordinary home tape recorder slightly modified, as described last month. In this concluding article, I shall describe how the synchronous motor is mounted on the projector and how to build and use the synchronizing amplifier which is required as the third piece of equipment.

At the time of developing this system, the application of the synchronous motor to the projector appeared at first to present unsurmountable problems, but it was later determined to be rather simple, especially where the projector is provided with a "threading knob" that enables the operator to manually move the projector mechanism when threading the film. This knob usually turns at the rate of one revolution per frame, or sixteen revolutions per second. the shaft extension and knob are removed and replaced with a special shaft extension and a small gear, which is coupled to a gear on the synchronous motor as will be described later. The synchronous motor is mounted to a plate which in turn mounts to the projector.

At synchronous speed, the motor rotates at the rate of 30 revolutions per second. The motor shaft is therefore geared to the special projector shaft extension using gears which will provide a ratio of 30 to 16. (Where the camera is also driven by a synchronous motor for producing "lip sync," the drive arrangement must be such that the camera is also driven at sixteen frames per second.)

The synchronous motor which I have used to control the projector is manufactured by Bodine Electric Company, and is identified as KYC-26. It operates at 1800 rpm, with .56 in. oz. torque at 117V a-c, 60 cps, and requires approximately 10.5 watts of driving power. This motor is considerably more powerful than other motors of similar physical size, being designed for special heavy-duty chart drive purposes. It is sometimes convenient to mount the motor capacitor in the base of the projector, and also to install a switch to turn the motor on and off.

While each make of projector may require a different application of the

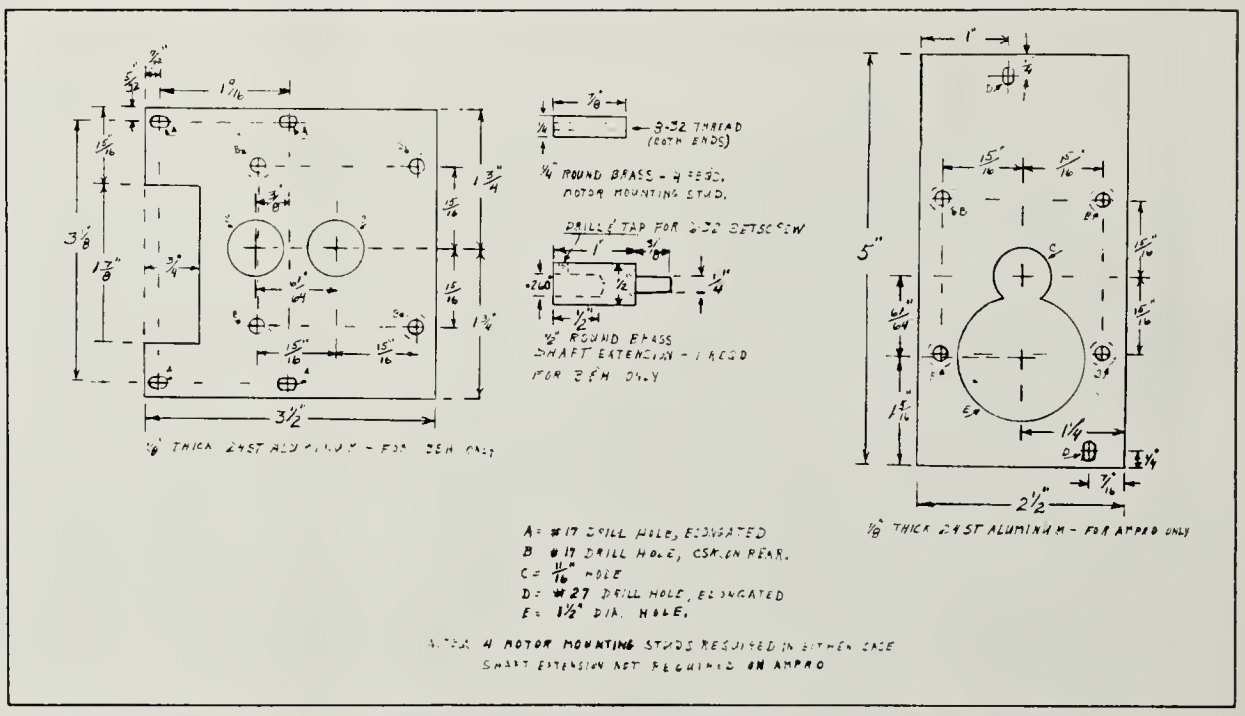


FIG. 2—Diagrams for preparing motor-mounting plates for either the Bell & Howell Diplomat or Ampro KD projectors.

synchronous motor, because of the position of the threading knob and shaft, the task is relatively simple. I have accompanied this two-part article with illustrations showing how sync motors have been mounted on (1) a Bell & Howell "Diplomat" projector (page 103 of the February, 1956, issue) and (2) on an Ampro Model KD projector, which illustrations appear at the beginning of this article (Fig. 1). The motor couples to the projector through gears having a ratio of 16 to 30. The gears used are manufactured by Boston Gear Works, and are standard items obtainable from most large hardware suppliers. They are 48-pitch gears with a 1/8-inch face. The motor gear is a 32-tooth No. G-138, and the projector gear is a 60-tooth No. G-144. Both gears are brass. A reduction in gear noise will result from the use of one fiber, nylon, or bakelite gear with one brass gear, but when properly adjusted, the gear noise is completely masked by the normal projector noise. Matching nylon gears are available from the Nylomatic Division, John A. English & Company of Morrisville, Pennsylvania. They are identified as "48 pitch molded nylon gears, with 1/8-inch face and 14½-degree pressure angle." Both the 32- and the 60-tooth gears are standard.

The 60-tooth Boston gear has a 1/4-inch shaft hole and a hub. The gear hub extends 1/4 inch, which is ample for drilling and tapping to accommodate a 6-32 set screw, which is the most convenient way to secure the gear to the projector shaft or shaft extension.

Both nylon gears, and the 32-tooth brass gear are plain, without hubs. It will be necessary to fit these gears with hubs to fasten them to the shafts. The motor shaft is 3/16 inch in diameter, and therefore the hubs fitted to the 32-tooth gears must have 3/16-inch shaft holes. These are simple hubs with set screws and are not shown in the drawing.

The synchronous motor is mounted on a special mounting plate with four motor mounting studs. The plate is secured to the projector by means of the existing tapped holes for the projector cover plate screws, permitting attachment without drilling or marring the projector in any way. The cover plate screws are replaced with longer screws of similar type to accommodate the extra thickness of the mounting plate.

The dimensions and drillings for the motor mounting plates are shown in Fig. 2. The plate for the Bell and Howell Filmo Diplomat is shown as (a), and the mounting plate for the Ampro KD is shown as (b). The motor mounting studs, four of which are used in either case, are shown as (c), and the shaft extension used with the Filmo Diplomat is shown as (d). Mounting screw holes A in the Filmo mounting plate and D in the Ampro mounting plate are slightly elongated as shown, to provide for a slight adjustment of the gear mesh. This adjustment when optimum will result in quiet gear operation.

Referring to Fig. 1, the method of mounting the motor on the Ampro requires an appreciable amount of machine work, both on the projector and in the production of small fittings. It is

(Continued on Page 169)

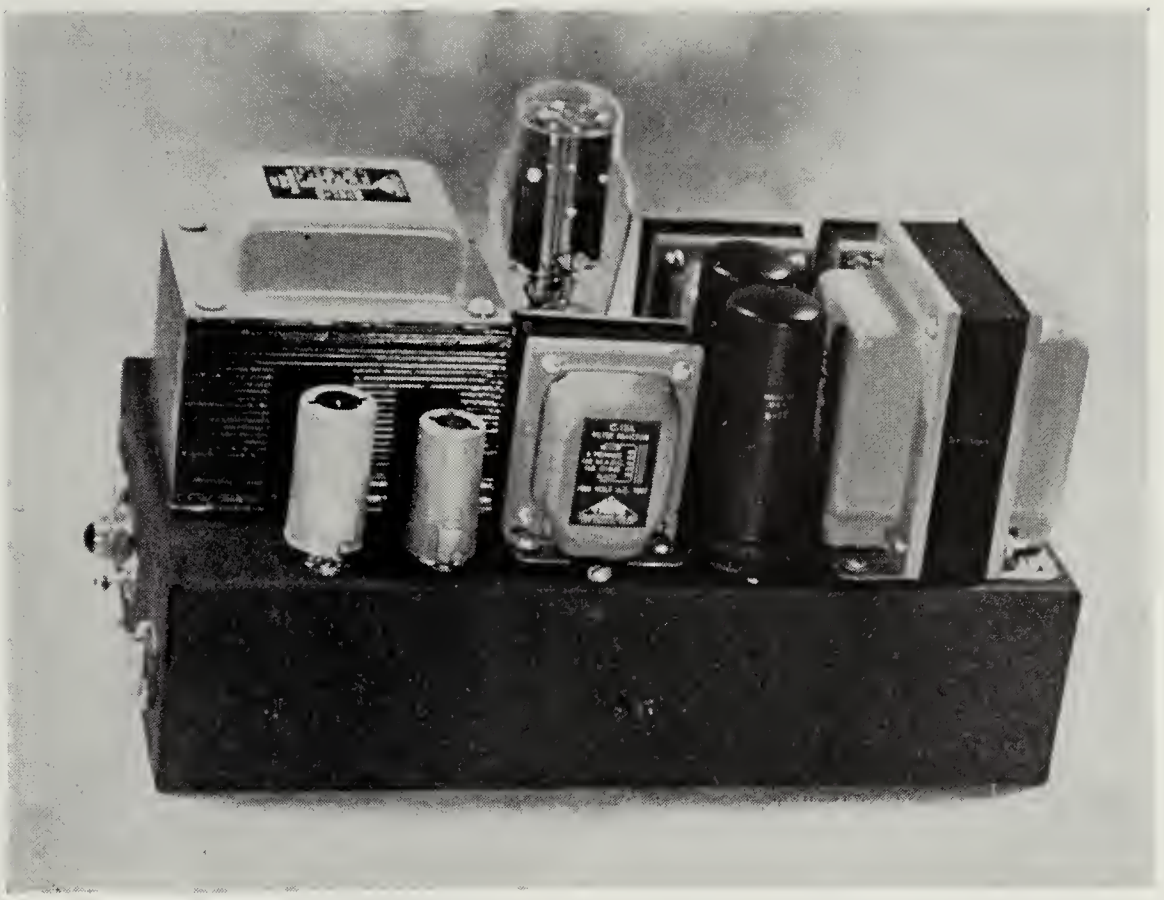


FIG. 3—The synchronizing amplifier may be built, following diagram below (Fig. 4) or purchased from radio supply house.

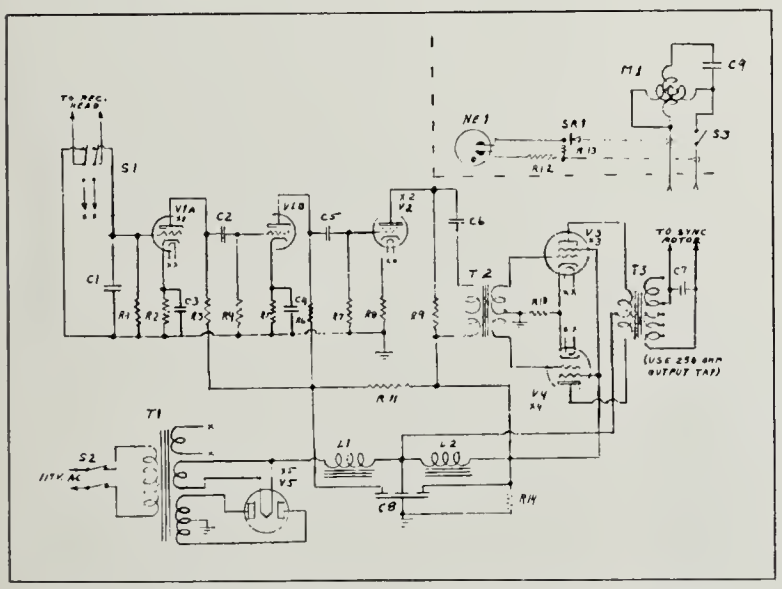


FIG. 4—Wiring diagram for synchronizing amplifier. Parts list appears at conclusion of article.

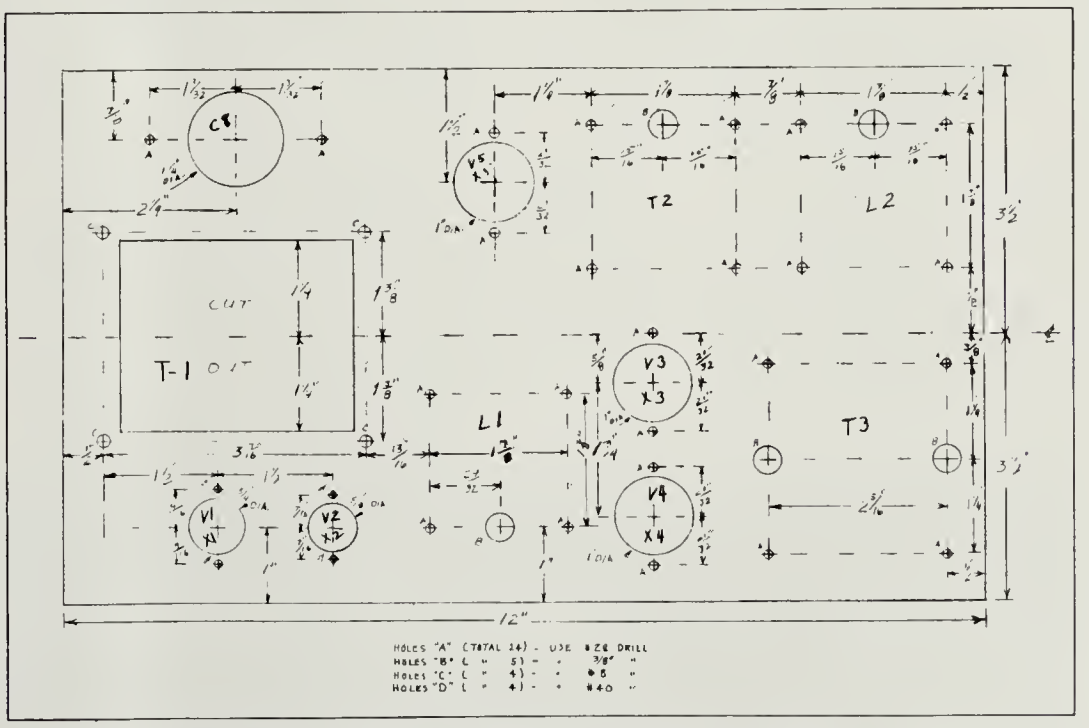
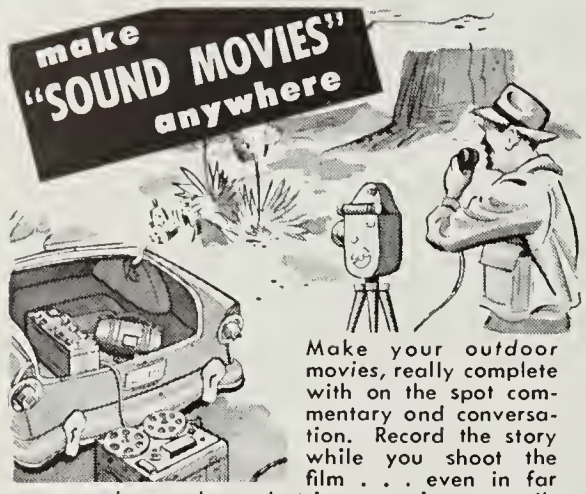
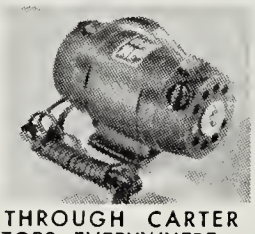


FIG. 5—Diagram for drilling chassis for synchronizing amplifier to take components shown in diagram (Fig. 4) and parts described in parts list.



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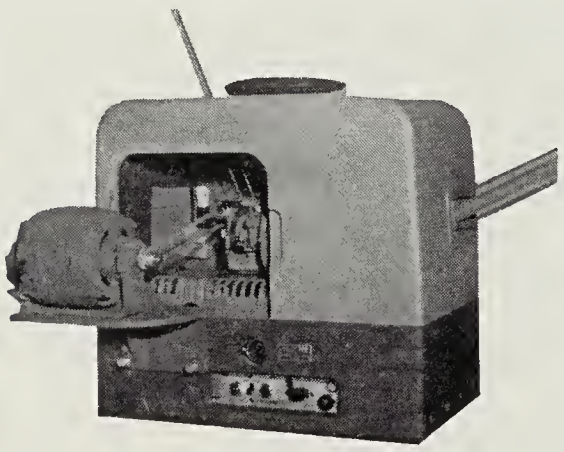
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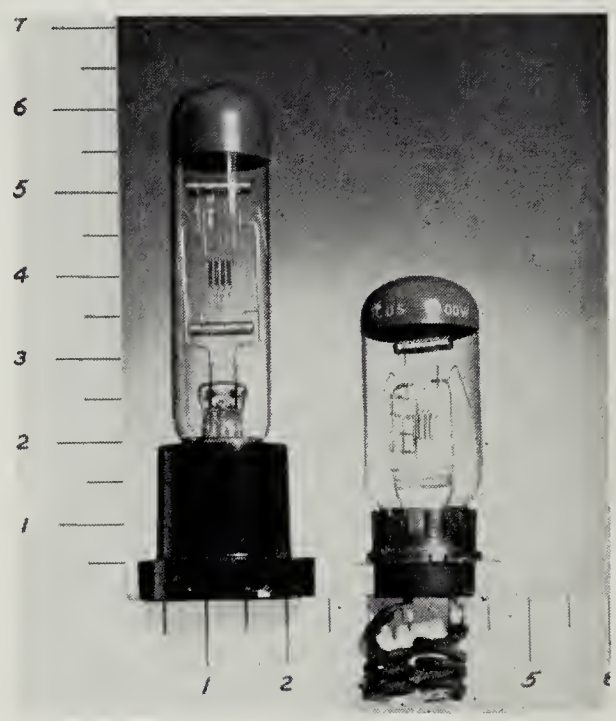
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Smaller Lamp To Change Projector Design

New Sylvania lamp burns horizontally, won't blacken



8MM MOVIE projector of radically new and compact design, made possible by smaller projection lamps, rests on table.



NEW Sylvania Tru-Focus projection lamp is shown at right, conventional lamp at left. Unique socket design insures alignment.

A NEW TYPE PROJECTION lamp which will permit entirely new design concepts in motion picture and slide projectors, has been announced by Sylvania Electric Products Inc. Providing greater light, the lamp is focused with complete accuracy.

Known as Tru-Focus, the new projection lamp will burn in any position, including horizontal or base down. For this reason, and because it is far more compact than previous lamps (only four inches high, including socket), the lamp opens up new fields in projector design.

In demonstrating the Tru-Focus lamp to a group of projector manufacturers in New York last month, Sylvania unveiled several projector models of radical design. The models, resembling some of the new small portable radios, were only about three inches high, and could be carried like a purse. No separate carrying case was required.

According to Sylvania, some of the advantages of the Tru-Focus lamp result from a socket of unique construction which is used with the lamp. Lamps inserted in the new sockets automatically snap into perfect prefocused alignment. This provides perfect alignment with the projector's optical system to assure precision light position.

To insure that the Tru-Focus lamp is positioned with absolute accuracy, a key is built into the lamp's base. This key inserts into a slot in the lamp's socket, locking the lamp into exact position. The base contacts are silver coated for positive electrical contact. To further assure precise optical alignment, the socket is equipped with 18 die-formed metal fingers which hold the lamp's base securely, regardless of burning position or severe vibration.

One of the important features of the Tru-Focus lamp is the fact that for the first time a lamp has been designed to burn horizontally without blackening the glass envelope. A new grid screen in the lamp directs the air flow inside the lamp. This prevents blistering of the glass and also collects a large part of the lamp-blackening particles which form when any projection lamp burns. This feature keeps the lamp's glass clearer and creates higher lumen maintenance.

The new lamps are made with stronger, long grain, nosag tungsten filaments. Also, the lamp is made with a ceramic blue top that can't scratch, chip or peel Ignition glass bridge supports and visible built-in fuses are provided.

The lamp was developed by Sylvania engineers as a result of discussions held two years ago with rojector manufacturers on the subject of design and construction problems. At that time it was stressed that the light source has been the chief bottleneck in designing a more compact, more modern projector. The Tru-Focus lamp is Sylvania's answer to that problem.

In general long shots of sunlit sea or exposure should be decreased by one or two stops over that for normal sunlit scenes for color photography. Where people appear in such scenes, reflectors should be used to throw fill-in light.

COINCIDENT SOUND

(Continued from Page 167)

shown here as a matter of interest and is good illustration of the truth of the saying "You always do it the hard way first." In this method of applying the motor, one of the claw actuating shafts was replaced by a new shaft extending through the projector housing and the projector housing was machined off flat to support the special spider which in turn mounts the motor. The motor and projector shaft extensions are coupled together through a small rubber insulated flexible coupling. (While this makes a very neat, quiet, and satisfactory modification, it is not recommended as a job to be done in the home workshop unless it is well-equipped with machine tools and is operated by a skilled machinist.) It has the further disadvantage of controlling the projector speed at 15 instead of 16 frames per second. While this does not impair the picture quality, it does set up a non-standard condition of operation.

In operation, the projector speed control is adjusted for a normal operating speed somewhat in excess of 16 frames per second. The synchronous motor then acts as an auxiliary load, holding the projector speed to 16 frames per second, subject to whatever variations are dictated by the tape speed. It would seem more logical to operate the projector at slightly below synchronous speed and to permit the synchronous motor to supply the additional power to bring it up to synchronism. This can be done, but the synchronous motor is capable of supplying appreciably more "pull down" than "pull up" torque. For this reason, the most positive control is exerted by slightly over-driving the projector with the normal drive motor and then using the synchronous motor as a brake.

It is reassuring to be able to determine that the projector is being held in synchronism with the tape. Such an indication may be conveniently obtained by the use of a strobe light, excited from the power supplied to the synchronous motor.

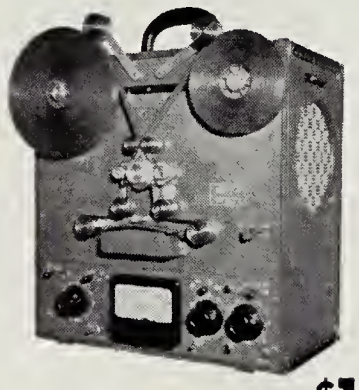
The operation of this strobe light is improved by applying the exciting voltage to the bulb through a half-wave selenium rectifier and a resistor network as shown schematically in the upper right-hand corner of Fig. 4. The selenium rectifier is the small type normally used for providing a bias voltage at low current for use in amplifier systems. The rectifier and associated resistors may be conveniently located in the base of the projector.

Standard film sprockets are equipped with eight teeth and in normal operation, rotate at the rate of two revolutions

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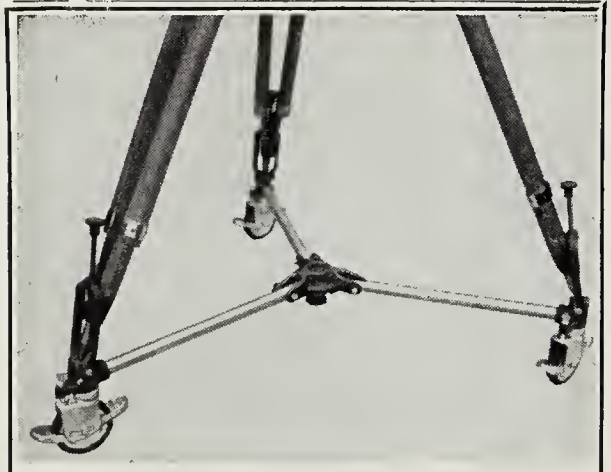
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each second. If thirty bands of white and thirty bands of black are equally spaced on the face of the sprocket near the outer edge, the sprocket will appear stationary when illuminated by the strobe light when the projector is operating at the proper speed. A convenient method of marking the sprocket is to drill thirty small holes around the periphery of it, using a No. 60 drill, then filling the holes with white paint. The holes must be *equally spaced* to form a steady image when the projector is in operation.

Another convenient modification is to replace the projector power plug with a four contact cable connector in order to apply power to the projector and to the synchronous motor through a single fourwire cable. If this modification is used, it will be found convenient to terminate the cord at the synchronizing amplifier and to obtain the power for the projector motor through the a-c power cord that also supplies primary power to the amplifier. For recording purposes, the projector is equipped with an auxiliary cord with the two power connections paralleled.

The method of mounting the synchronous motor and the positioning of the recording head on the tape recorder will vary somewhat with the projector and recorder design, and some study may be required for best results with makes and types other than those shown. However, the problem appears rather simple in the case of most popular projectors and tape recorders.

The synchronizing amplifier may be built in any desired configuration, but the most convenient housing is a portable case such as that housing the amplifier shown in Fig. 3. A chassis drilling layout is shown in Fig. 5 for the benefit of those who desire to construct an exact duplicate of the amplifier shown. Multiple conductor cables fitted with suitable connectors are used for interconnections between the tape recorder, projector, and synchronizing amplifier.

The output from the auxiliary recording head is sharply peaked. It more nearly resembles pulses than a sine wave. This is due to the saturation type of recording used for the synchronizig tone. The high amplitude pulses occur as the magnetized portions of the tape change abruptly from N to S as the tape passes the gap in the head.

Since only one froquency is of interest for synchronizing purposes, the head is roughly resonated at a frequency of 60 cps. by shunting the leads with a capacitance. When this is done, the output more nearly resembles a sine wave, with only a slight loss in peak amplitude compared to the output of the nonresonated head.

The limiting action of the driver and power amplifier stages results in an output wave form of constant amplitude. A

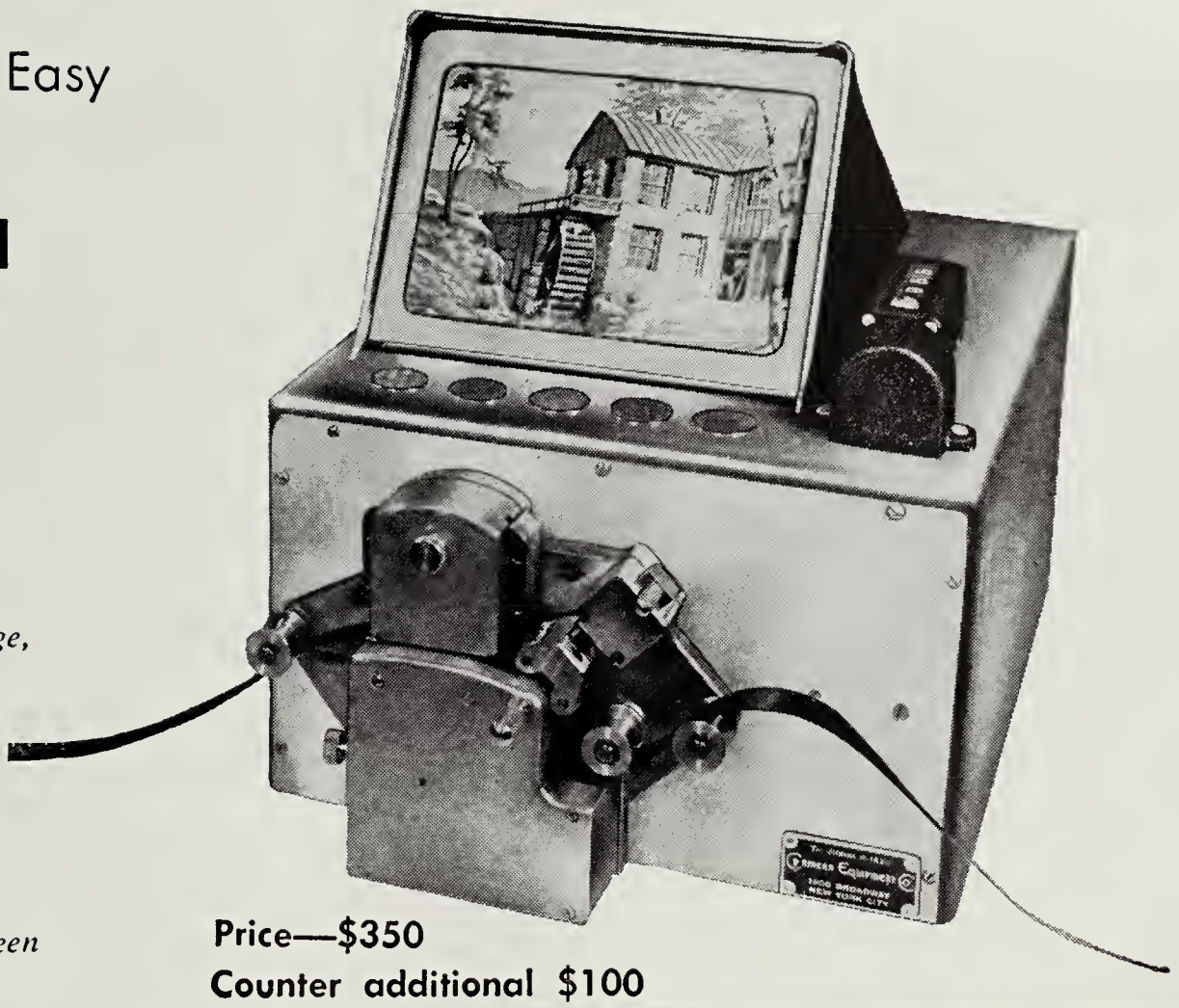
PARTS LIST FOR SYNCHRONIZING AMPLIFIER
(See Diagram, Figure 4)

C1—8 Mfd. 150 V. DCW. Cornell Dubilier BBR 8-150 electrolytic copocitor.
C2, C5, ond C6—0.1 Mfd. 300 V. DCW. Sprogue "Vitomin Q" copocitor.
C3 ond C4—25 Mfd. 25 V. DCW. Cornell Dubilier BBR 25-25.
C7—2 Mfd. 600 V. DCW. Aerovox type 30 bothtub cose copocitor.
C8—20-20-20 Mfd 450 V. DCW. Aerovox AFH-3-36 Dry electrolytic copocitor.
C9—1.1 Mfd. 220 V. AC copocitor (Supplied with M1)
L1 ond L2—6 H. 160 Mo. Filter Reoctor. Triod C-12A
M1—117 V. 60 CPS 1800 RPM Synchronous Motor. Bodine KYC-26.
NE1—Bayonet Bose Neon Lomp. G.E. No. NE16
R1, R4, ond R7—470 K. ½ Wott IRC BTS composition resistors.
R2 ond R5—820 Ohms. 1 Wott IRC BTA composition resistors.
R3 ond R6—100 K. ½ Wott IRC BTS composition resistors.
R8—1800 Ohms 1 Wott IRC BTA composition resistor.
R9—100 K. 1 Wott IRC BTA composition resistor.
R10—300 Ohms 10 Wott IRC type 1¾A wire wound resistor.
R11—10 K. 2 Wott IRC BTB composition resistor.
R12—27 K. 1 Wott IRC BTA composition resistor.
R13—50 K. 1 Wott IRC BTA composiiton resistor.
R14—50 K. 10 Wott Ohmite "Brown Devil" wire wound resistor.
S1—D.P.D.T. Toggle Switch—Cutler-Hommer No. 8363.
S2—D.P.S.T. Toggle Switch—Cutler-Hommer No. 7560.
S3—S.P.S.T. Toggle Switch—Cutler-Hommer No. 7500.
SR1—Selenium Rectifier—Rodio Reciptor Co. Code 8Y1.
T1—Power Supply Tronsformer—Triod R-21B.
T2—Interstoge Coupling Tronsformer—Triod A-35A.
T3—Output Tronsformer—Triod S-60A.
V1—Vocuum Tube—Twin Triode Type 12RX7.
V2—Vocuum Tube—Twin Triode Type 6C4.
V3 ond V4—Vocuum Tube—Beom Power Type 6L6.
X1—Tube Socket—9 pin miniature—Cinch 9XB, with 9S2 tube shield.
X2—Tube Socket—7 pin miniature—Cinch 7XB, with 7S3 tube shield.
X3, X4, ond X5—Tube Sockets—molded octol—Cinch No. 8AB.
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capacitor across the secondary of the output transformer serves to round out the wave form, and at the same time improve the overall performance by providing a power factor correction for the inductive motor load. Although the resultant wave form is far from sinusoidal, it is entirely adequate for motor driving purposes.

The synchronizing amplifier system is shown schematically in Fig. 4. The four-pole, double-throw switch indicated as S1 is used for switching the head from 6.3 volts a-c for recording to the amplifier input for reproduction. This switch should rightfully be incorporated with the tape recorder record-playback switch but is shown as a part of the synchronizing amplfier for simplicity. Also, in many instances it may not be desirable to disturb the electrical arrangement of the tape recorder.

Capacitor C1 resonates the head at approximately 60 cps. The correct value for this purpose is 8 ufd., but a 10-mfd low voltage electrolytic capacitor of the type designed for cathode bias resistor by-passing has proven entirely satisfactory. It is also readily available and small in size.

The two-stage voltage amplifier consisting of twin triode V1A and V1B and associated components serves to amplify the signal to a level sufficient to properly excite the grid of limiter tube V2. Plate power for this tube is applied

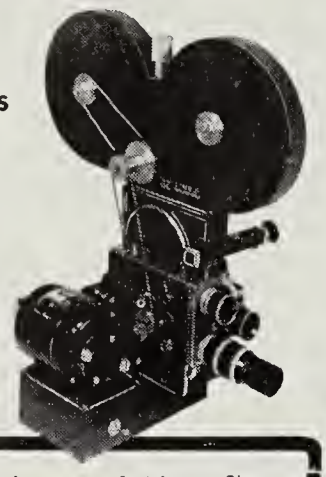
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through shunt resistor R-9, while the a-c output is applied to the primary of interstage coupling tranformer T-2 through isolating capacitor C-6. The low frequency response of the transformer is improved by the elimination of the d-c from its primary winding and the limiting action is improved by using a relatively high value of resistance for R-9.

Transformer T-2 is a conventional single plate to push-pull grid interstage transformer having a primary to secondary ratio of 1:3 as is normally used in connection with class "A" amplifiers when no grid current is encountered. In class "B" service where grid current is encountered, a transformer having a step down ratio is used, and other precautions are taken to provide good driver regulation.

In this instance, poor regulation is desirable to provide amplitude limiting. Consequently, the wave form is squared off abruptly at the start of grid current, resulting in an output wave form due to the inability of the driver stage to supply power to drive the power amplifier grids positive.

The power amplifier incorporates two 6L6 tubes in a push-pull circuit which is quite conventional except for the amplitude-limiting feature described above.

The strobe light system shown connected across the synchronous motor consists of neon bulb NE1, series dropping resistor R-12, rectifier shunt resistor R-13, and selenium rectifier SR1. The strobe light is optional with the synchronous motor drive.

The power supply for the synchronizing amplifier is quite conventional and does not warrant further mention.

Other amplifying and limiting systems may be used, if desired, providing they meet the fundamental requirement of supplying the synchronous motor with 120-volts of a-c power at a constant level derived from or controlled by the synchronizing tone recorded on the tape. For proper operation, it is essential that the power applied to the motor be of a relatively constant amplitude. Since it is difficult to exclude stray power line pickup when amplifying 60-cycles from the low output level of the tape to the relatively high level required to drive the motor, a limiter is highly desirable to prevent amplitude changes due to a slow beat between the stray pickup and the synchronizing signal.

The reliability of this system has been proven by satisfactory performance over a period of approximately two years during which hundreds of hours of film showings have been made without a single instance of the loss of synchronism.

FILMING "THE LAST HUNT"

(Continued from Page 149)

that read:

"A thundering herd! Hundreds of buffalo in a mammoth herd, running wildly, fill the screen. They rush onto and *over* the *camera*. Their wild eyes and crashing hooves, their brute power, smash into our consciousness. They present an awesome, black, hairy tidal wave!"

To film that paragraph took months of planning, two days of setting up camera positions, ten hours of rounding up the buffalo, and two minutes to film.

But, those were the most exciting two minutes of my life, which, as a movie cameraman, has had its share of thrills.

Coping with 10,000 Egyptian "extras" during a 120-degree heat wave that felled camels while we made "Land of the Pharaohs" in Egypt, or with a room full of teen-age terrorists during "Blackboard Jungle" (they were actors but they looked and acted their parts too believably for comfort) were unique experiences I'll never forget. So was the stampede of 10,000 cattle in Arizona's Rain Valley while filming "Red River." But, it was simpler than photographing two buffalo, much less 1,000.

We were told these animals were dangerous, quick-tempered and completely unpredictable. We discovered they would appear as contentedly peaceful as Elsie the Cow one moment. The next they would become as furious and unstoppable as Rocky Marciano after a clout on his nose.

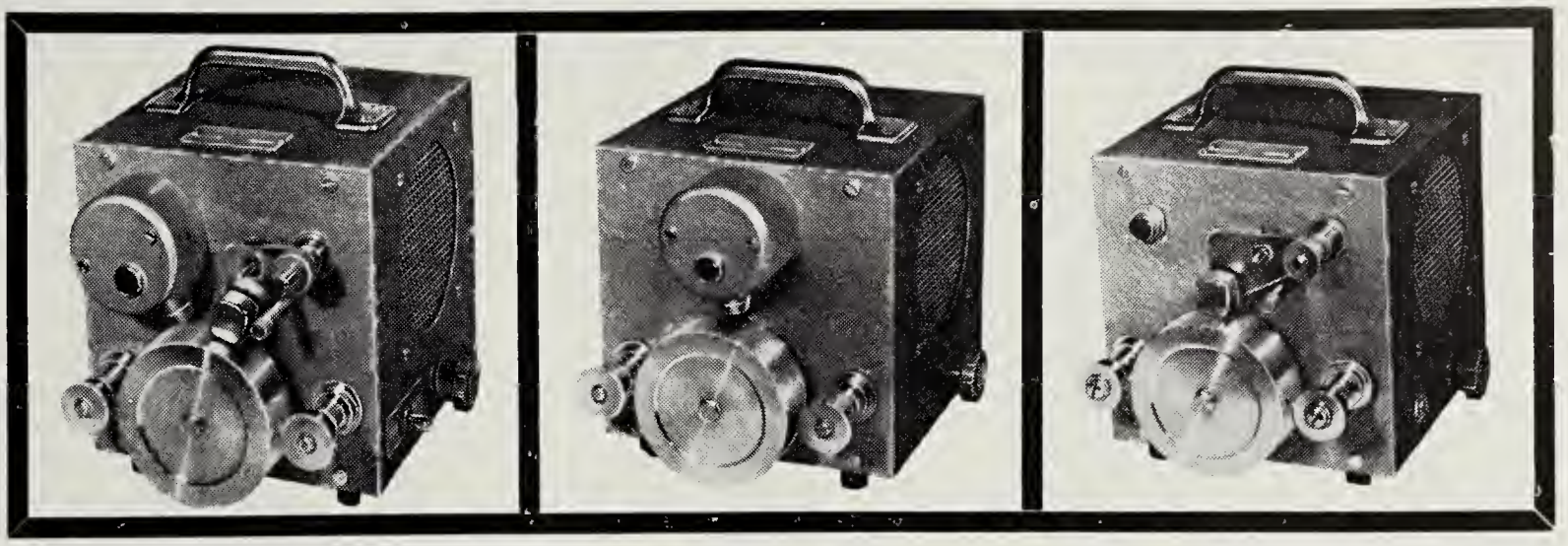
We also were told they would charge a man or a horse, and could outrun the latter, but they wouldn't bother an automobile. On our first day on location, the local driver of our car told how, only the year before, he had started out for a drive through Custer State Park with his wife and child. It wound up with his auto turned over in the middle of the road, the maddened bull which had upset it with one charge still pawing at it.

By the time we finished, we considered ourselves lucky to have escaped without casualties. That we did so is to be credited to the thoroughness of the preparations and precautions that were taken. The latter included armed marksmen of the Park who, during our most dangerous scenes, were stationed near the cameras.

The most exciting scenes of the filming, of course, were of the big stampede.

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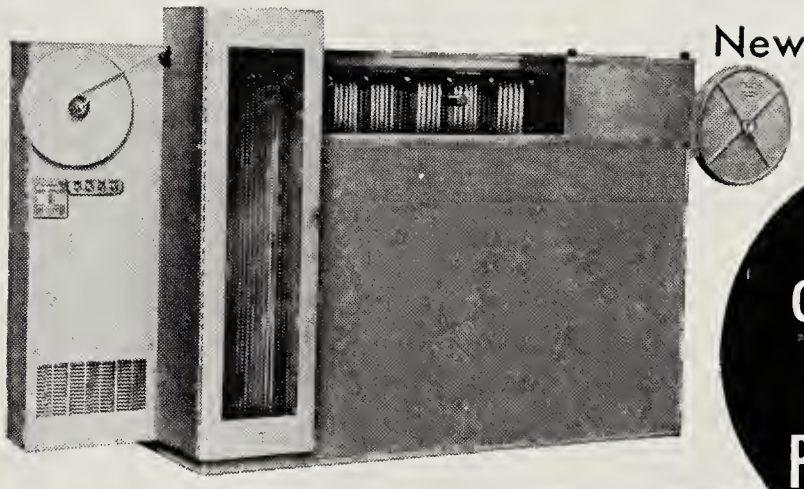
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On a steep hillside in the Park, about 45 miles from our location headquarters in Rapid City, we had placed four of the five cameras brought with us. The Mitchells with new CinemaScope lenses were set (1) in the pit covered by the heavy roof, (2) behind a camouflaged, steel-reinforced barricade, and (3) on a platform to one side of the expected path of the bison. An Eclair Camerette with CinemaScope lens was lashed to a tree, to be worked by remote control from the pit. (Our fifth camera was another Camerette.)

Rounding up of the 1,000 buffalo from the 109-square-mile Park began at 4 a.m.—dawn. First spotted by air from a Piper Cub, the bison were brought from all directions by a dozen jeeps and as many wranglers on horseback. After breaking away frequently, they finally were herded together onto a long meadow at the top of our hillside just before two in the afternoon.

A twelve-unit short-wave radio system, with Director Brooks at its head unit, maintained contact with all camera crews, the sound crew and six of the jeeps throughout the operation. When every detail had been checked and double-checked, Brooks gave the word and the stampede was on. Pushed by jeeps — with horns blaring — and by cowboys—yelling their shrill "Yeee-ow" —the animals came thundering down



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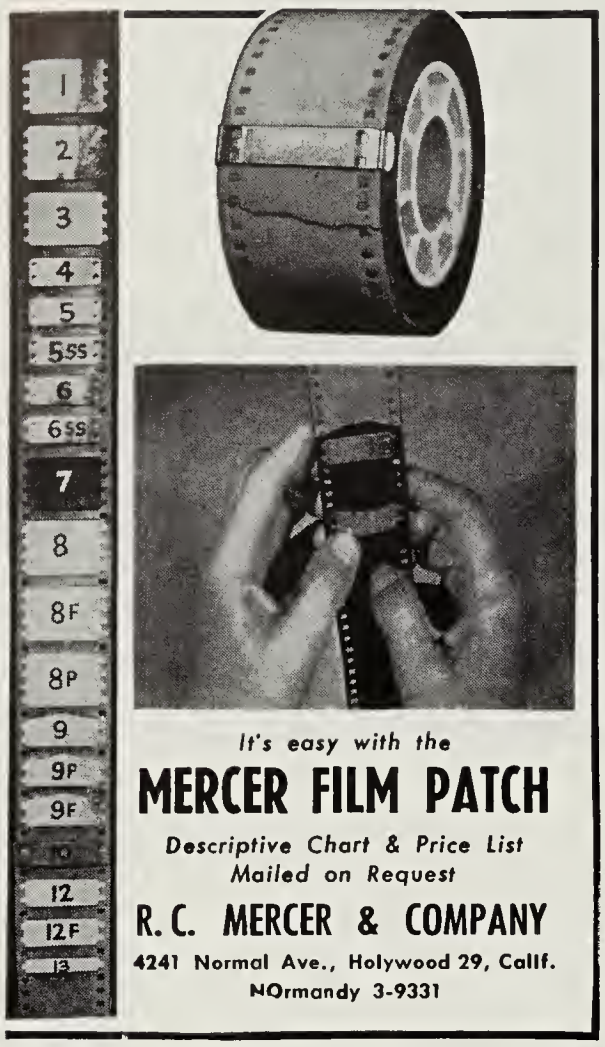
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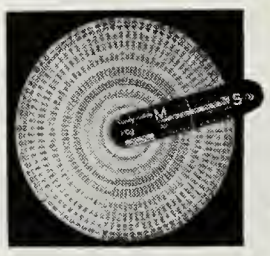
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the hillside within a matter of seconds.

They crossed directly in front of the platform camera, over, under and around the three cameras in the pit, the tree and behind the barricade. As if they had read the script, they were wild-eyed, their hooves crashed, and they ran wildly to give what each camera operator later reported as "a full screen" of buffalo. The thundering sound of the stampede, right overhead, was the most frightening aspect of it from my position in the pit.

Realizing this scene was our biggest gamble of the filming, we all breathed much easier when it was over. But, we had other sequences with the buffalo that proved scarcely less challenging.

There were smaller stampedes with from 400 to 800 buffalo. One of these was with a runaway wagon, its mules frightened into a mad, uncontrollable dash by the bison. During its filming, the wagon was turned over twice, once as scheduled and again not according to the script. On this latter spill, actor Russ Tamblyn was tossed head over heels and knocked unconscious for several minutes.

One of my biggest thrills came when Brooks and I stood behind a camera in a small valley, while buffalo stormed past on both sides of us near enough to reach out and touch. We were lucky they didn't head straight down the middle.

While we had our best success with the three Mitchells, particularly on action scenes without dialogue when we could run them open on a slip head, the hand-held Camerettes proved mighty handy as "emergency" cameras. We frequently were grabbing them to rush in for a quick, close shot in the midst of a herd, or suddenly to climb a steep mountainside as an unusual picture presented itself.

To get what we did on film, we transported to South Dakota 39 cases of camera equipment, the most I've ever seen on a single location. In addition to filming scenes from every kind of platform imaginable, we shot from two different camera cars, from a jeep and from an R.O. Boom.

There were many times when all didn't go according to the script. A scene scheduled for one day, with our cameras all in position, would have to wait for another when the buffalo, living up to their reputation for the unpredictable, would start our way and then quickly turn up a steep hillside in the opposite direction.

When this happened, jeeps and wranglers would take off right on their heels, hoping to turn them back toward us. But, frequently it was a lost cause.

Typical was the radioed message from a jeep on one such occasion. Moments after some 300 buffalo had left our vicinity to disappear over a neighboring hill, the jeep in pursuit called in, "We now are two miles from camera position. Buffalo one mile ahead of us!"

"GIANT" ENHANCED BY BOLD, OFF-BEAT PHOTOGRAPHY

(Continued from Page 159)

of twilight. It was a challenge to both the color film and the photographer to capture every important detail of the scene under most unusual lighting circumstances; but, here again, boldness and skill—a willingness to attempt "the impossible"—paid off in a beautifully-photographed sequence.

"With ex-cinematographer-now-director George Stevens," said Mellor, "the photography is as important as any other phase of the production. Stevens expects his cameraman to take the initiative in giving the photography little pictorial nuances or atmospheric touches that will visually complement the action or the environment in which it is played.

"Inspiration for unique camera treatment usually comes from watching Stevens on the set—the way he plans his action and how he rehearses his players. As soon as I could see what he was aiming for, I started planning the photography accordingly. The aim was always to contribute something pictorially special to the scene or sequence. An example is the series of scenes inside the Texas mansion following the girl's fatal fall from a horse. Here contrast was used to a great extent to point up the poignancy of the scene, as the girl lay dying in the den of the big mansion. Here the room was lighted in low contrast while light coming from the rooms beyond reflected the bright sunlight of the day. The players in the den were lit in semi-silhouette and the overall effect was to enhance, through the medium of lighting, the feeling of sorrow that prevailed."

Another example of the way director Stevens gave Bill Mellor a free hand in the planning and working out of photographic problems occurred when the company moved to the Los Angeles Statler Hotel for a series of scenes around the pool, in the lobby, and in one of the hotel corridors. Stevens estimated that all the scenes called for on this location could be shot in two days. This was arrived at following a preproduction survey at which time Stevens used a number of stills of the two hotel sites for reference. Mellor made his

own personal survey and told Stevens he believed they could wind up the photography there in a single day, working a little overtime, perhaps. Stevens accepted the challenge.

The following day, Mellor had his crew come in and place lights around the swimming pool for the scenes that were to be shot there. The crew then moved to the hotel corridor, where a long dolly shot was to be made, and set up lights here, employing Colortrans and photofloods, because of the limited space.

Shooting began at the pool, and as soon as all the scenes were in the can, the lights were struck and moved to the hotel lobby for scenes to be filmed there. Meanwhile, the company moved to the hotel corridor and photographed the dolly shot plus some incident scenes, and by the time they were finished, the lobby was lit and ready for the company to move in there. In this way, Mellor always had one set rigged ahead. The company moved right along according to Mellor's schedule and wound up the location shooting just one hour later than originally estimated.

One secret of the off-beat photography of this picture is the bold and confident way that scenes were shot at a time of day when other companies would have believed satisfactory color photography was impossible. "Many a time," Mellor said, "we would take advantage of late afternoon sun, the low-contrast lighting of sunset, to get more effective photography. The result is these scenes are different than anything normally seen on the screen.

"On another occasion we were shooting exteriors near Lake Tahoe. There was a scene of some action on a lonely road threading through a forest of trees, yet with enough open sky to give the light we needed. I saw the sun would soon be going behind a mass of clouds, and I felt this would provide a soft quality light that would give the scene a compelling pictorial effect. I purposely stalled along until the sun was obscurred by the clouds, then set the lens for the diminished light and shot the scene. It was a gamble, but the results in the "rushes" a few days later justified it.

"Later, I had to match thees exteriors shot in low contrast with the 'indoor exteriors' on the sound stage. This called for restraint in lighting the studio sets. Using film clips of the location shots as a guide, the lighting was gradually diminished to approximate that of the location scene, then a brute was fitted with a silk and used to produce the necessary cross-lighting. The matching was almost perfect.

"In all, there were an estimated 2,000 setups on this picture—an unusual number; we had to move pretty fast all the

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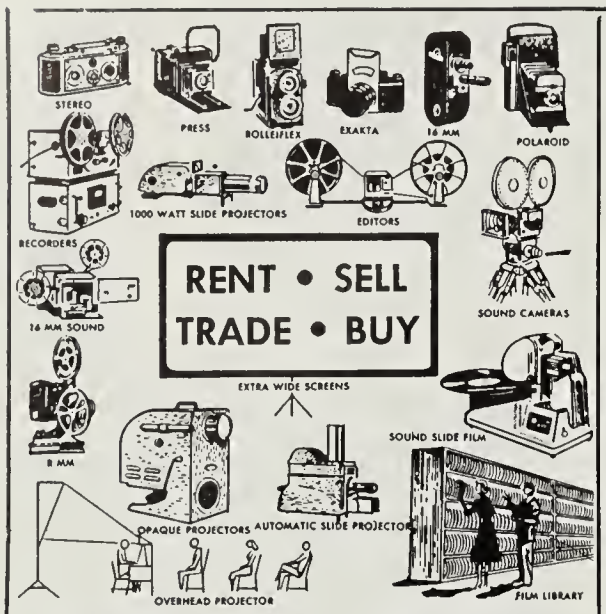
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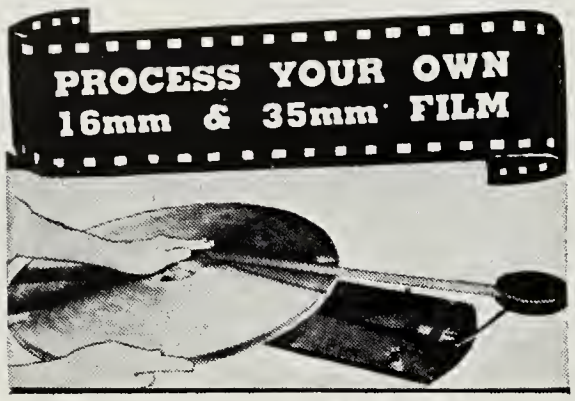
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time to accomplish this — between 25 and 30 setups a day at the studio. We started right out at top speed, for there was much pressure applied at the beginning to get shots in the can so that much of the large cast could be relieved and the company moved to the first location site in Virginia. The urgency continued even here, and by the time we moved on to Marfa, Texas, the cast was pared down to the bare essentials and we went along on a more orderly day-to-day program of production.

"Because the Texas location involved the greater part of the exterior shooting, a tremendous amount of equipment had to be shipped there for our use. Included were two 'Blue Gooses' (unique camera cars equipped with hydraulic platforms), one Chapman crane — an item rented to the studios by an independent supplier—two 2,000-watt mobile gas generators, and eight Mitchell cameras.

"Perhaps one of the most unusual uses to which the Chapman crane was put was in shooting the big cattle roundup sequence. With the Mitchell camera mounted on the boom, we moved right out into the field, into the midst of the cattle, and made shots from every conceivable angle — all of which proved ideal material for the cutters who made it into one of the most thrilling sequences of the picture."

"Giant" was photographed in the WarnerColor process, with an aspect ratio of 1.74-to-1. The negative was Eastman Color and the cameras used were standard Mitchell 35's.

ELECTRONICAM

(Continued from Page 155)

buckle switches above and below the film aperture. The magazine capacity is 2000 ft. The film camera is housed in a blimp in the usual manner. From a portable control room camera lineups can be made by use of monitors. Each camera has its own monitor on which appears the picture which that particular camera is recording. It is also equipped with a "blooping" light to record a cue mark on one edge of the film as an aid to synchronizing the film with the sound track in editing.

From the control room the Director of Photography can talk to the operators and position each camera for the particular scene to be photographed. During the take he can see on the preview monitors what each camera is photographing. The picture from either camera can be placed on a fourth monitor and, by punching buttons on a control panel with the proper selection of camera shots, a 16mm kinescope can be made during the take—which is used as an editing guide. This kinescope can include all fades, dissolves, and wipes which are made in the kinescope electronically. At different positions about the set can be placed monitors for anyone concerned in the making of the picture to visually see what is being photographed.

Preparation has been made to instantly play back on a loudspeaker in the monitor room the taped recorded soundtrack of any scene.

The dollies for the camera can be any of the variety which are used in motion picture production. In general, this is a motion picture camera which has added all of the advantages electronics can provide.

The advantage of a parallax-free finder by which the taking lens can be focused visually is the first major improvement on a motion picture camera since the Mitchell camera introduced the rack-over.

NEWSREELING

(Continued from Page 161)

with 8″, 12″, 16″ and 20″ telephoto lenses. He always works with an assistant whose duty it is to make notes of the respective play to guide the narrator in writing his script.

"In shooting football games," Alley says, "the cameraman must know the game thoroughly, be able to anticipate the play and to put the right lens in place to cover it. He must not turn the camera on or off too soon, but allow a few feet of film to run before and after to give additional time for the narrator to start his description of the play."

Because most newsreel men today are shooting for both theatre and TV newsreels, they often use 16mm cameras exclusively. Nowadays, says Alley, more and more 16mm footage is being blown up to 35mm for theatre newsreels.

The number of "contributing" newsreel photographers in the field is greater today, too. These are the men who shoot newsreel stuff on speculation and take their chances on hitting pay dirt. The big newsreel producers pay as high as $5.00 per foot for usable material, depending on the subject matter and its timeliness.

While he has photographed some of the most dramatic pictures of events of the twentieth century, Alley likes to think of himself as a reporter who uses a camera instead of a pencil. He leaves the artistic and scientific approaches to cinematography to those who have the time, and the inclination, to be arty and scientific.

"I know little about the chemistry of photography, never studied composition,

and never read a manual on lighting," he explains. "My aim is simply to be at the right place at the right time, focus my camera and press the button. I never let the mechanics of my camera bother me, because I don't want anything to interfere with my getting a clear, simple picture."

Alley began his career as a news photographer for the *Chicago Tribune* when he was fifteen years old. Two years later he learned how to crank a movie camera and went to work for Pathe Newsreel. His first major assignment proved a news beat. When the *Eastland*, an excursion boat, overturned in the Chicago River in 1915, Alley arrived ahead of the police and got his story on film. A colleague dressed as an intern hustled his films through police lines.

He made his first combat films in 1916 when he accompanied U.S. Army troops pursuing the Mexican bandit, Pancho Villa. When the U.S. declared war on Germany, Alley joined the Army and became a Signal Corps photographer. After the Armistice, Alley, back in the United States, illustrated the biggest newsreel headlines of the day with his camera. He was regional manager of Hearst Newsreel in Chicago from 1920 to 1937. It was early that year he went to the Orient and when the Japs invaded Shanghai, he was on the spot with his camera shooting newsreel footage. It

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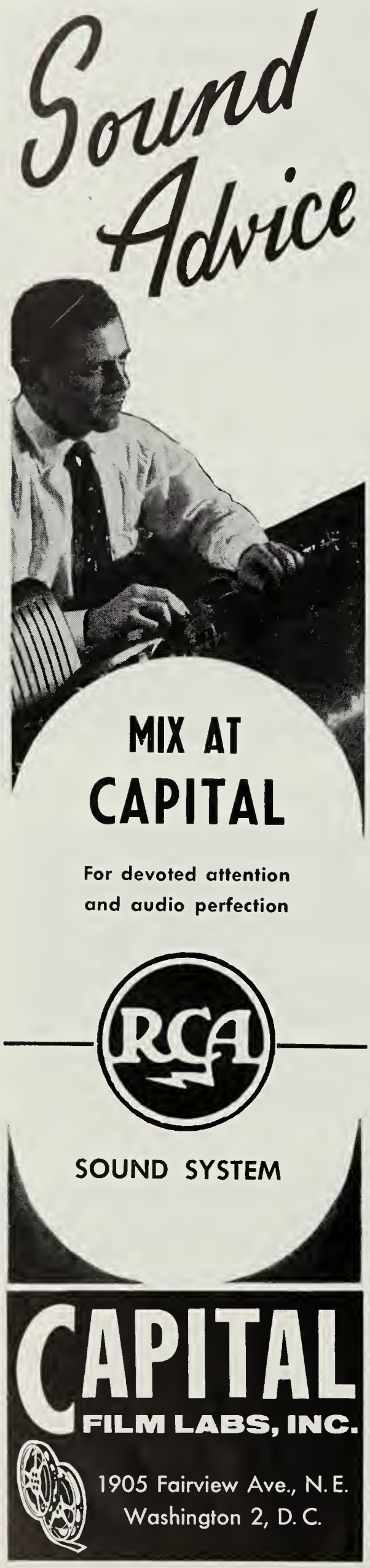
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was while he was making a documentary film later that year that the opportunity for making the biggest scoop of his career presented itself. That was when the Japs sunk the gunboat *Panay*.

During his 40-odd years in the newsreel field. Alley has twice struck out on his own, only to return to newsreels. In 1936 he resigned from the Hearst organization to produce documentary films. This field lacked the action and the opportunity for full use of his talents, and he resumed newsreeling, this time with Universal. In 1949, he launched his own TV newsreel but the pace was too hot for the rewards that were in it; there weren't enough sets in use in those days to justify the cost of a sustaining newsreel by TV stations. Alley was just five years ahead of his time. Today, both NBC and CBS, with the aid of the major theatre newsreel organizations, produce profitable syndicated newsreels for the nation's television stations.

Hearst Newsreels. of course, is also one of the major producers of news films for television. In addition to its popular "News of the Day," the organization also produces Telenews-TV and Weekly Sports Reel-TV. The diversification not only has kept Hearst Newsreels in business, but it keeps the organization's staff photographers on their toes to produce the tremendous amount of footage that the television reels require.

"Newsreel photography," Alley says, "is a great field for the cameraman who will persevere, 'milk' the subject, and avoid cliches. But he must have the imagination, and the newsman's story sense to produce usable footage consistently."

16MM SPECIAL EFFECTS

(Continued from Page 163)

effect is desired it subtracts substantially from the reality of the illusion. Thus the vertical angle of the camera was measured and recorded for every scene, using a plumb-bob and a protractor.

A record was kept of the particular lens used in filming a scene. This was done so that the background scene and the double print scene could be shot with the same lens. This lens record was particularly important for scenes to be played in depth. If the backgound were shot with a 40mm lens and the actors with a 15mm lens the actors would not vary in size properly as they moved towards or away from the camera. As they moved away they diminished in size faster than the objects or people in the double printed background which appear to be at the same distance. This produces an unrealistic illusion which may or may not be desired.

Of course, at times this sameness of vertical camera angle and lens size meant that in order to get the desired relative size of the characters to their background it was necessary to mount the camera in the studio rafters. The reverse situation meant positioning the actors up high in the air on black draped platforms.

When the special effects photography was finished, A and B rolls were quickly prepared and rushed to the laboratory for color check print. The Calvin Company of Kansas City, Missouri, is to be congratulated on the steadiness of their printer. The "jitter," so long associated with double-printing in 16mm. was so slight as to be practically unnoticeable.

The results of this extensive analysis and notation of details were believable and effective special effects. Scenes that greatly added to the audience appeal of this picture were shot in a relatively short period of time and with a minimum number of retakes.

OSCAR NOMINEES

(Continued from Page 150)

names of the directors of photography who filmed them are:

BLACK-AND-WHITE

"I'll Cry Tomorrow," Metro-Goldwyn-Mayer, Arthur E. Arling, A.S.C.

"Blackboard Jungle," Metro-Goldwyn-Mayer, Russell Harlan, A.S.C.

"The Rose Tattoo," Paramount, James Wong Howe, A.S.C.

"Queen Bee," Columbia, Charles Lang, A.S.C.

"Marty," Hecht-Lancaster-UA, Joseph LaShelle, A.S.C.

COLOR

"To Catch a Thief," Paramount, Robert Burks, A.S.C.

"A Man Called Peter," 20th Century-Fox, Harold Lipstein, A.S.C.

"Love Is a Many Splendored Thing," 20th Century-Fox, Leon Shamroy, A.S.C.

"Guys and Dolls," Samuel Goldwyn-MGM, Harry Stradling, A.S.C.

"Oklahoma!" Rodgers & Hammerstein, Robert Surtees, A.S.C.

Six of the nominee directors of photography are previous Oscar winners, while seven of the names have appeared among the nominees in previous years. Charles Lang was awarded an Oscar in 1934 for the black-and-white photography of "A Farewell to Arms." Arthur Arling won an Oscar in 1947 as one of the three collaborators in the photography of the color production, "The Yearling." Joseph LaShelle won his first Oscar in 1945 for the black-and-white photography of "Laura."

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Leon Shamroy is a three-time Oscar winner, having won awards in 1943 for "The Black Swan" (color), in 1945 for "Wilson" (color) and in 1946 for "Leave Her To Heaven" (color). Subsequently, he has been among the unrewarded nominees almost every year since 1949. "Prince of Foxes," one of his few black-and-white achievements, was nominated in 1950. Following this his nominations included "David and Bathsheba" (1952), "Snows of Kilimanjaro" (1953) and "The Robe" (1954).

Harry Stradling won the Oscar in 1946 for the best achievement in black-and-white photography of "The Picture of Dorian Gray." Like Leon Shamroy, he, too, has often been among the Oscar nominees only to be eliminated in the final voting. Recent nominations include "The Barkleys of Broadway" (color), 1950; "A Streetcar Named Desire" (B&W), 1952, and "Hans Christian Anderson" (color), 1953.

Robert Surtees won an Oscar for "King Solomon's Mines" (color) in 1951, repeated the triumph in 1952 with an award for the black-and-white photography of "The Bad and the Beautiful." In addition, he holds an Academy nomination certificate for "Quo Vadis," color production which he filmed in 1951 in Italy for MGM.

Others, among this year's nominees for Oscars for cinematography, who have also been on the nominations list in previous years, include Russell Harlan for "The Big Sky" (B&W), 1953; Joseph LaShelle for "Come to the Stable" (B&W), 1950, and "My Cousin Rachel" (B&W), 1953; Charles Lang for "Sudden Fear," 1953; and Robert Burks for "Strangers On a Train" (B&W), 1953.

Nominations for all classes of Academy Awards are made by the individual artists and craftsmen of the film industry. Actors nominate actors, cinematographers nominate cinematographers, and so on. The final balloting is confined to the Academy membership.

The ten productions nominated this year are now being voted on by the Academy's 1,710 members to select the best achievement in black-and-white

(Continued on Page 182)



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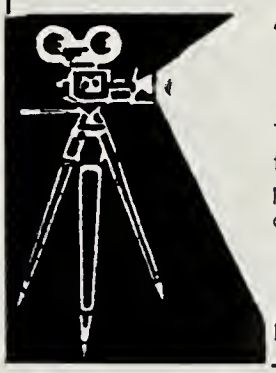
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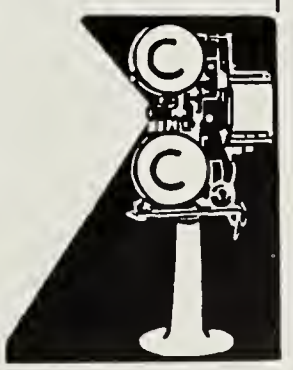
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Photographic Assignments

FEBRUARY • 1956

Who, where and what the industry's cameramen were shooting last month.

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ALLIED ARTISTS

• Ellsworth Fredricks, ASC, "Hold Back the Night," with John Payne and Mona Freeman. Allan Dwan, director.

• W. Howard Greene, ASC, "Three for Jamie Dawn," with Larraine Day, Richard Carlson, Ricardo Montalban and June Havoc. Thomas Carr, director.

AMERICAN NATIONAL

• Floyd Crosby, ASC, "TV Reader's Digest," TV. Various directors.

• Charles Van Enger, ASC, "Big Town," TV, (Mark Stevens TV Co.) with Mark Stevens, Barry Kelley, and Doe Avedon. Mark Stevens, director.

• William A. Sickner, ASC, "Medic," TV, (Medic TV Prods.) with James E. Moser, Frank La Tourette, and Virginia Martindale. James E. Moser, director.

• Bob Hoffman, "I Led Three Lives," TV, (Ziv-TV Corp.). Herb Strock, director: "The Man Called X," TV, (Ziv-TV Corp.) with Barry Sullivan. Eddie Davis, director.

• Hal Mohr, ASC, a TV pilot with Joan Davis. (Mark Stevens Prods.). John Rich, director.

• Fred West, ASC, color TV series with Mr. Vanderman. (World-Wide Bible Pictures.) Harold Dennis, director.

• Curt Fetters, "A Man Called X, TV, (Ziv-TV Corp.) wtih Barry Sullivan. Eddie Davis, director; "I Led Three Lives," TV, (Ziv-TV Corp.) with Richard Carlson. Jack Herzberg, director.

• Monroe Askins, TV pilot, "Series 44." Leon Benson, director.

• Gordon Avil, ASC, "The Black Sleep," (Bel-Air Prod. U.A. release) with Basil Rathbone and Akim Tamiroff. Reginald LeBorg, director.

CALIFORNIA STUDIOS

• Walter Strenge, ASC, Rosemary Clooney Show, TV, with Rosemary Clooney and Tony Curtis; Rosemary Clooney Show, TV, with Rosemary Clooney, Gale Storm. Dik Darley, director.

• Fleet Southcott, "Gunsmoke," TV, (Filmaster Prods. Inc.) with James Arness and Dennis Weaver. C. Marquis Warren, director.

• Ray Fernstrom, ASC, Firestone commercial, TV. Clarence Eurist, director.

BILTMORE STUDIOS (New York)

• J. Burgi Contner, ASC, "The Goldbergs," TV, (Guild Films) with Gertrude Berg, Robert Harris and Eli Mintz. Marc Daniels, director; "I Spy," TV, (Guild Films) with Raymond Massey. William Berke, director.

COLUMBIA

• Gert Anderson, ASC, "Celebrity Playhouse," TV, (Screen Gems). James Nilsen, director.

• Fred Jackman, "Rin-Tin-Tin," TV, (Screen Gems) with Lee Aaker, and James Brown. Robert Walker, director.

• Frederick Young, ASC, "Beyond Mombama," (Technicolor & CinemaScope) (Todon Prods.) (shooting in Africa) with Cornel Wilde and Donna Reed. George Marshall, director.

• Jack Martin, ASC, "Zarak Khan," (Technicolor & CinemaScope) (Warwick Prods.) (shooting in London) with Victor Mature and Anita Ekberg. Terence Young, director.

• Basil Emmott, "Portrait in Smoke," (Film Locations Prods.) (shooting in London) with Arlene Dahl and Phil Carey. Ken Hughes, director.

WALT DISNEY

• Charles Boyle, ASC, and Walter Castle, ASC, "Westward Ho, the Wagons," (CinemaScope & Technicolor) with Fess Parker, and Kathleen Crowley. William Beaudine, director.

FILMCRAFT STUDIOS

• Virgil Miller, ASC, "You Bet Your Life," TV, (Filmcraft Prods.) with Groucho Marx. Robert Dwan and Bernie Smith, directors.

FLYING A

• Bill Bradford, ASC, "Buffalo Bill, Jr.," TV, with Dickey Jones and Pappy Cheshire. George Archinbaud and Frank MacDonald, directors; "Annie Oakley," TV, with Gale Davis. George Archibaud and Frank MacDonald, directors.

FOX WESTERN AVENUE STUDIOS

• Sam Leavitt, ASC, "Knight of the South Seas," TV, (Lovina Prods.) with Jon Hall, and Roberta Haynes. Lee Sholem, director.

• Karl Struss, ASC, "My Friend Flicka," TV, with Gene Evans and Anita Louise. Robert Gordon, director.

• Lloyd Ahern, ASC, "20th-Fox Hour," TV. Lewis Allen, director.

• Ed Dupar, ASC, "20th-Fox Hour," TV. Jules Bricken, director.

GENERAL SERVICE STUDIOS

• Robert Pittack, ASC, "Private Secretary," TV, (Chertok TV, Inc.) with Ann Southern, Don Porter and Ann Tyrrell. Oscar Rudolph, director.

• Philip Tannura, ASC, "Burns & Allen Show," TV, (McCadden Prods.) with Gracie Allen and George Burns. Frederick deCordova, producer-director; Carnation & B. F. Goodrich commercials, TV. Frederick deCordova, director.

• Harry Wild, ASC, "Bob Cummings Show," TV, (Laurmac Prods.) with Bob Cummings and Rosemary DeCamp. Rod Amateau, director; Winston commercials, TV. Rod Amateau, director.

• James Van Trees, ASC, "The People's Choice," TV, (Norden Prods.) with Jackie Cooper and Pat Breslin. Robert S. Finkel, director; color TV commercials for Maybelline and Carnation Milk Co. Stanley Frazen, director.

• Neal Beckner, "The Adventures of Ozzie and Harriet," TV, (Stage 5 Prods.) with Ozzie, Harriet, David and Ricky Nelson. Ozzie Nelson, director.

• Lester White, ASC, "Navy Log," TV, (CBS). Various actors. John Yarbrough, director.

GOLDWYN STUDIOS

• William Whitley, ASC, "Crossroads," TV, (Federal TV, Inc.). Ralph Murphy and other directors.

• Norbert Brodine, ASC, "The Loretta Young Show," TV, (Lewislor Films, Inc.) with Loretta Young. Richard Morris, director.

• Ray Foster, ASC, "The Birth of a Song," TV, (Hamblen Prods.) with Stuart, Suzy, Veeva and Obee Hamblen. Russell Vincent, director.

• George Clemens, ASC, "Schlitz Playhouse of Stars," TV, (Meridian Prods.). Jim Sheldon, director.

• Ellis W. Carter, ASC, "Flight to Hong Kong," (Sabre Prods. U.A. release) with Rory Calhoun and Dolores Donlon. Joseph Newman, director.

• Sam Leavitt, ASC, "Step Down to Terror," (Security Pictures-U.A. release) with Anthony Quinn, Carol Ohmart and Kathy Grant. Harry Horner, director.

INDEPENDENTS

• James Wong Howe, ASC, "Death of a Scoundrel," (Chas. Martin Prods.) with George Saunders and Yvonne de Carlo. Charles Martin, director.

• Joe Biroc, ASC, "Fragile Fox," (Associates & Aldrich; U.A. release) with Jack Palance and Eddie Albert. Robert Aldrich, director.

• C. M. Pennington Richards, "Tarzan and the Lost Safari," (Color) (Sol Lesser Prods. —shooting in England) with Gordon Scott and Peter Arne. Bruce Humberstone, director.

• Guy Roe, ASC, "Gangbusters," TV, (Visual Drama, Inc.) Bill Kern, director.

• Clark Ramsey, ASC, "Return of the Outlaw," (Eastmancolor & Widescreen) (R-G Prods.) with Anthony Dexter, Sonny Tufts and Marie Windsor. Oliver Drake, director.

KLING STUDIOS

• Carl Berger, ASC, "Death Valley Days," TV, (McGowan Prods.). Stuart McGowan, director; "Sky King," TV, (McGowan Prods.) with Kirby Grant and Gloria Winters. Stuart E. McGowan and Jodie Copelan, directors.

• Ray Fernstrom, ASC. Chevrolet TV commercial. Hank Ludwin, director .

• Earnest Haller, ASC, "The Intruder," with Edmund Purdom and Ida Lupino. Irving Rapper, director.

KTTV STUDIOS

• Mack Stengler, ASC, "Liberace," TV, (Guild Films, Inc.) with Liberace. Duke Goldstone, director.

• Kenneth Peach, ASC, "Fury," TV, (TV Programs of America) with Peter Graves and Boddy Diamond. Sidney Salkow and Ray Nazarro, directors.

• Bill Bradford, ASC, "The Outlaws," (Superscope) (A.F.R.C. Prods.) with Alan Hale, Jr. Sam Newfield, director.

METRO-GOLDWYN-MAYER

• George Folsey, ASC, "The Fastest Gun Alive," with Glenn Ford and Jeanne Crain. Russell Rouse, director.

• Jack Hildyard, "The Living Idol," (Eastman Color & CinemaScope) (Al Lewin Prods.) (shooting in Mexico) with Steve Forrest and Kiliane Montevecchi. Ken Hughes, director.

• Paul Vogel, ASC, "High Society," (VistaVision & Technicolor) with Bing Crosby, Grace Kelly and Frank Sinatra. Charles Walters, director.

• Joseph Ruttenberg, ASC, "Somebody Up There Likes Me," (Wide-Screen) with Paul Newman and Pier Angeli. Robert Weis, director.

• Robert Bronner, "The Opposite Sex," (CinemaScope & Color) with June Allyson and Jeff Richards. Dave Miller, director.

• Harold Marzorati, ASC, "MGM Parade," TV, with George Murphy and MGM contract players. George Murphy, director.

• Russell Harlan, ASC, "Teahouse of the August Moon," with Marlon Brando and Glenn Ford.

MOTION PICTURE CENTER

• Robert De Grasse, ASC, "Make Room for Daddy," TV, (Desilu Prod.) with Danny Thomas, Jean Hagen and Sherry Jackson. Sheldon Leonard, director.

• Karl Freund, ASC, "I Love Lucy," TV, (Desilu Prod.) with Lucille Ball and Desi Arnaz. James Kern, director; "Our Miss Brooks," TV, (Desilu Prod.) with Eve Arden. John Rich, director.

Sid Hickox, ASC, "December Bride," TV, (Desilu Prod.) with Spring Byington. Jerry Thorpe, director; TV pilot with Red Skelton (Desilu Prod.). C. Burns, director.

• Harold Wellman, ASC, "Wyatt Earp," TV, (Desilu Prod.) with Hugh O'Brian. Frank McDonald, director.

PARAMOUNT

• Loyal Griggs, ASC and Peverell Marley, ASC, "The Ten Commandments," (VistaVision & Technicolor) with Charlton Heston and Anne Baxter. Cecil B. de Mille, director.

• Daniel Fapp, ASC, "Pardners," (VistaVision & Technicolor) with Dean Martin and Jerry Lewis. Norman Taurog, director.

• Haskell Boggs, "The Leather Saint," (VistaVision) with Paul Douglas and John Derke. Norman Retchin, director.

REPUBLIC STUDIOS

• John Macburnie, ASC, "An Echo of the Past," TV, with Jane Wyman. Sidney Lanfield, director; "Bedelia Buckley," TV, with Kathryn Card. Al Green, director; "Eric Vincent," TV. James Anderson, director; "The Millionaire," TV, Sobey Martin, director; "The Jack Benny Show," TV, with Jack Benny, Ralph Levy, director.

• Herb Kirkpatrick, "The Crusader," TV, with Bryan Keith. John Lucas, director.

• Bud Thackery, ASC, "The Secret Place," TV, with Theresa Wright. Hershel Daugherty, director; Proctor & Gamble commercial with Bill Goodwin. Bud Springsteen, director; "1986," with Ben Cooper and Joan Evans. William Witney, director.

• Ed Colman, ASC, "Dragnet," TV, (Mark VII Prod.) with Jack Webb. Jack Webb, director.

• Walter Strenge, ASC, Union Oil TV commercial. Pete Adrian, director.

• Reggie Lanning, "Alfred Hitchcock Presents," TV, with Hurd Hatfield. Robert Stevenson, director; "There Was An Old Woman," TV, with Estelle Winwood. Robert Stevenson, director.

• John Russell, ASC, "The Night Goes On," TV, with Rosalind Russell. Robert Stevenson, director.

• Jorge Stahl, "Acapulco," (shooting in Mexico) with Ralph Meeker and Janice Rule. Paul Henreid, director.

• Dan Clark, ASC, "Do You Trust Your Wife," TV, (Don Monya Co.) with Edgar Bergen. Jim Morgan, director.

RKO

• William Snyder, ASC, "The First Traveling Saleslady," (Widescreen & Eastmancolor) with Ginger Rogers, Carol Channing and Barry Nelson. Arthur Lubin, director.

• George Diskant, ASC, "Stage Seven, Hall of Stars," TV, (Four Star Prods.).

HAL ROACH STUDIOS

• Lucien Andriot, ASC, "The Life of Riley," TV, with William Bendix. Abby Berlin, director; "It's A Great Life," TV, Michael O'Shea, William Bishop and James Dunn. Chris Nyby, director.

• Lothrop Worth, ASC, "The Great Gildersleeve, TV, with Willard Waterman. Charles Barton, director.

• Paul Ivano, "Stories of John Nesbitt," TV, with John Nesbitt. Various directors.

• Jack Mackenzie, ASC, "Code 3," TV. Ted Post and Paul Landers, directors; "Frontier," TV (Tomoda Prod.). Various directors.

SKINNER STUDIOS

• Gilbert Warrenton, ASC, "Sergeant Preston of the Yukon," TV, with Richard Simmons. Various directors.

SUNSET STAGE

• Fred West, ASC, "Gun Slinger," TV, (Santa Clara Prods.) with John Ireland and Barry Gardner. Roger Corman, director.

• Ray Fernstrom, ASC, Schaeffer pen commercial, TV, (5 Star Prods.). Chet Glassley, director.

20TH CENTURY FOX

• Lee Garmes, ASC, "The Sixth of June," (CinemaScope & DeLuxe Color) with Robert Taylor, Richard Todd and Dana Wynter. Henry Koster, director.

• Joe Macdonald, ASC, "Hilda Crane," (CinemaScope & DeLuxe Color) with Guy Madison and Jean Simmons. Philip Dunne, director.

• Lucien Ballard, ASC, "The Proud Ones," (CinemaScope & DeLuxe Color) with Robert Ryan and Virginia Mayo. Robert Webb, director.

UNIVERSAL - INTERNATIONAL

• Maury Gertsman, ASC, "Behind the High Wall," with Tom Tully and Sylvia Sidney. Abner Biberman, director; Lux TV show with Shirley Jones. Will Cowan, director; Lux TV show with Lori Nelson. Jack Daniels, director; Kellog TV show with Tom Rettig. Will Cowan, director.

• William Daniels, ASC, "Istanbul," (Color) with Cornel Borchers and Errol Flynn. Joe Pevney, director.

• Charles Welborn, "Istanbul," (Color) (shooting backgrounds in Turkey).

• George Robinson, ASC, "Toy Tiger," (Color—added scenes with Tim Hovey and

(Continued on Page 182)

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OSCAR NOMINEES

(Continued from Page 179)

and color photography for 1955. The result will be announced at the Academy of Motion Picture Arts and Sciences annual presentation ceremonies in Hollywood the evening of March 21st.

As in previous years, both foreign and domestic films were eligible for achievement awards consideration. Early this year, each director of photography in the motion picture industry was given the opportunity to submit to the nominating board of the Academy the name of one black-and-white and one color production on which he has received single or joint screen credit as director of photography. In addition, each may also submit the name of one eligible black-and-white and one eligible color production of foreign origin which he deems worthy of the Academy's consideration. Through a process of balloting, the productions thus named are reduced to ten in number and placed on the nominations ballot.

All voting is by secret ballot, and the winners are known only to the certified public accountants who are entrusted with the final tabulation. The final vote results will be kept secret until the evening of the Awards presentations. The hour-and-a-half ceremonies, incidentally, will be carried over the entire NBC television and radio networks.

A full account of the winning films and of the men who photographed them will appear in the April issue of *American Cinematographer*.

BRIGHTEST LAMP

(Continued from Page 186)

necessary depth of field. In supplying this quantity of light the temperature on the studio set frequently rises to a point at which it becomes a problem to both actors and technicians. The RF lamp conducts out the heat which in other lamps is transferred into the air.

In describing the construction of the new RF light source, Mr. Connor pointed out that the lamp represents a union of lighting and electronics. He said it opens the door to an entirely new field which might be termed "lumonics." He explained that the energy used to produce the light in the RF lamp is the same as that used in TV and radio broadcasting. In the case of the RF lamp, the energy is concentrated into a small disc about 5/16 of an inch in diameter, causing it to incandesce brilliantly.

The RF lamp, which is heated by induction, uses for the light-emitting source a disc of refractory material. Because the refractory material can be heated to a much higher temperature than the tungsten filaments of incandescent lamps, a great increase in light is attained. Also, because of the higher temperature, the light has a higher content of blue than does the incandescent lamp and provides more light emission in the visible range. With the use of a disc, as contrasted with the usual tungsten wire filament, the light from the lamp can be focused directly without complicated optics.

The RF energy is carried to the RF lamp from a radio frequency oscillator by means of a copper coil wound around the outside of the lamp. A DC voltage source is used and the brightness of the lamp can be controlled by varying the voltage. A water line can be connected to the oscillator to cool the lamp and coil.

PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 181)

Jerry Hopper; "Cool and Groovy," (Musical Short). Will Cowan, director; "Francis in the Haunted House," with Mickey Rooney and Virginia Wells. Will Cowan, director.

● RUSSELL METTY, ASC, "Battle Hymn," (Color) preparing. Douglas Sirk, director.

● CLIFFORD STINE, ASC, (Musical Short). Will Cowan, director.

WARNER BROS.

● ROBERT BURKS, ASC, and TOM TUTWILER, ASC, "The Spirit of St. Louis," (Eastmancolor & CinemaScope) with James Stewart. Billy Wilder, director.

● BORIS KAUFMAN, ASC, "Baby Doll," (Widescreen) (Newtown Prods. shooting in New York) with Karl Malden and Carroll Baker. Elia Karzan, director.

● HAROLD STINE, ASC, "Warner Bros. Presents," TV, with Clint Walker and Dennis Hopper. Les Martensen, director: "Casablanca," TV, with Charles McGraw and Marcel Dalio. Don Weis, director: Anthology Series, TV. Don Weis, director: "Cheyenne," TV, Richard Baer, director.

● CARL GUTHRIE, ASC, "Survival," TV, with Jim Backus and Julie Bishop. Paul Stewart, director; "Casablanca," TV, with Charles McGraw. Richard Baer, director.

● RAY FERNSTROM, ASC, "Behind the Camera," TV, with Eve Arden and Gig Young. John Claar, director.

● TED MCCORD, ASC, "The Burning Hills." (WarnerColor & CinemaScope) with Tab Hunter and Natalie Wood. Stuart Heisler, director.

● HAL ROSSON, ASC, "Toward the Unknown," (Warner-Color & CinemaScope) (Toluca Prods.) with William Holden, Lloyd Nolan, and Virginia Leith. Mervyn LeRoy, director.

PLATTER MOVIES

(Continued from Page 164)

selected and rejected. Ultimately, I scrawled a brief story outline, and made notes of shots to be taken. The only difficulty that I experienced during my mental effervescence was the unpalatable thought of waiting a few days before I could get my camera rolling. Waiting for the week-end to transfer my mental pictures onto film.

Seeking the proper location along the shores of the blue Pacific was not difficult at all. We cruised along at a deliberate pace. All eyes focused fore, astern, larboard, and portside. After a couple of hours of skirting the ocean we sighted what appeared to be the precise spot for filming "Ebb Tide." Imediately I dropped anchor. Upon closer inspection we found that the site was made to order.

Preparation for camera action progressed rather rapidly. I loaded my Bell & Howell 70DL with 100 feet of single-perforated Kodachrome, set it on a tripod, arranged for action, and began shooting. I'm sure that most amateur movies enthusiasts will agree that color is a must for scenics, musical or otherwise.

Briefly, this is how "Ebb Tide" took form on film: The entire composition was woven around a little barefoot boy and his dog surf-fishing from a rock. The flat rock jutted for some distance into the sea — barely above the blue Pacific waters. This was desirable because with a medium or semi-distant shot I captured the gentle waves and the white surf splashing around the rock.

The picture opens with a distant shot of the shoreline. The boy, Dickie, and the pup walk the water's edge toward the camera, and approach the rock. Naturally, a shot of the requisite gulls stunt-flying over the rolling water is included. Title "Ebb Tide" and the screen credits are superimposed. Shots of Dickie lazily fishing and the playful pup were intercut with a variety of scenic shots taken from different angels. The picture closes with a colorful sunset over the Pacific. Palm trees in the foreground give the scene depth. As the boy and pup leave the rock, the camera shows the boy's feet passing over the "End" title scratched in the wet sand. Waves rolling up the sandy shore wash away the footprints, and the "End" title.

The mental pictures of "Ebb Tide" will vary with each individual. Therefore, no two photographers will have exactly the same thing on film. Nevertheless, many good versions of "Ebb Tide" are possible. Employing a little imagination and some effort, success, plus an enjoyable film is assured.

Some editing was necessary before I had the film soundstriped. Transferring the music from the record to the film was a fairly simple procedure with my B&H 202 projector. Sound effects were added, but only where they increased the effectiveness of the picture.

Subsequently, I gathered the family for a preview and an appraisal of our efforts. The initial projection of the completed musical proved it to be a great success. It was much better than we had anticipated.

From this signal experience I learned that most amateurs can achieve delightful results with but a little thought and some story plan in mind. Add to this a fair measure of good photography and the producer of a Platter Movie can be asured of a hit.

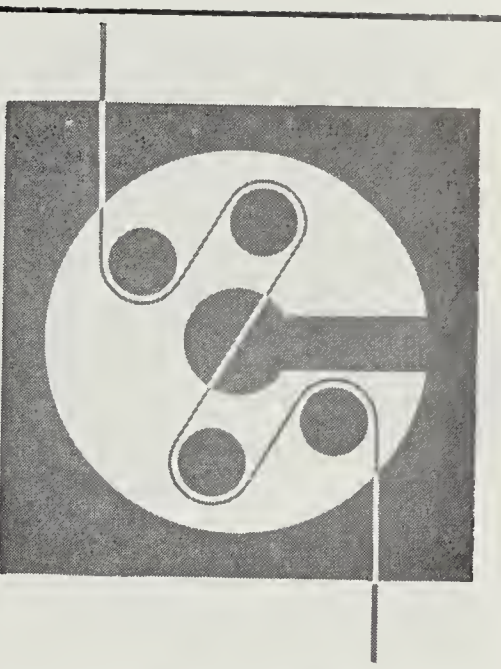
Good photography — besides the requisites of accurate focus and correct lens opening — simply demands a little extra time in choosing the proper angles to shoot from; and deliberate care in picture composition. That is, striving for a visually pleasing arrangement of subject matter within the frame of a viewfinder and the camera angles which will most forcefully convey to the audience what the cameraman wants it to see, and how he wants them to see. A variety of such angles will increase the drama and surely guarantee more audience appeal.

A setting or locale has a pronounced effect on the mood and realism of a movie. Therefore the choice of a proper picture site is desirable and most important.

Equally entertaining Platter Movies can be produced to conform to popular, gag, or classical records. Patterned to suit the taste of the individual photographer.

Re-recording of copyrighted music without permission constitutes an infringement. To avoid trespassing, it is advisable, even for the amateur, to purchase records which are released for re-recording. Records that are specifically cut for this purpose.

There are many fine records currently available for re-recording. The selection is growing progressively larger and more comprehensive. Also available are sound effects and mood music records. Also, records that can serve a twofold purpose — provide material for movies, and furnish an excellent listening library. These are easily obtainable at most record shops.



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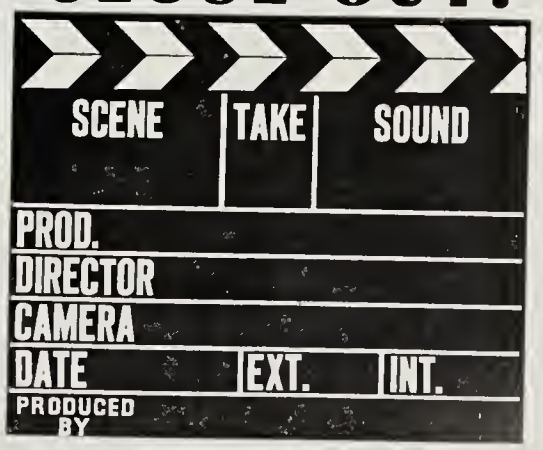
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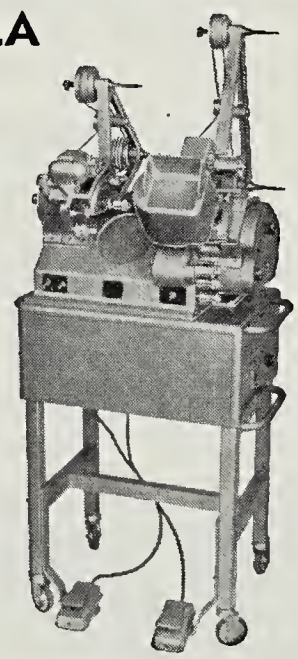
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Booklets Catalogs Brochures

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For Cine Fans

"Take a Tip From Hollywood" is title of 36-page illustrated booklet offered by Elgeet Optical Co., which shows amateur movie makers how to add professional excitement to their home movies. Featured are sections on: Planning a Shooting Script, A simplified Sample Script for a Child's Birthday Party, Tricks for "Different" effects, Accessory Lenses, Timing Length of Scenes, and the making of transitional scenes.

Copies are available at 10c each from above company at 838 Smith Street, Rochester, N. Y.

• • •

Editing Tips

The Kalart Company, Plainville, Conn., has prepared a free booklet on tips and tricks of home movie editing which it will send to anyone who requests it.

• • •

Flight Research Cameras

The Traid Corporation, Sherman Oaks, Calif., has prepared an 8-page illustrated brochure on "Flight Research Synchronous Cameras" which it produces along with a large catalogue of other scientific photographic equipment.

Cameras, which are made especially for flight testing, airborne fire control systems, missile tracking, bomb spotting, stereographic photography and automatic control equipment, are illustrated and comprehensive technical data given. Both 16mm and 35mm models are illustrated and described.

• • •

Editing for Beginners

Amateur movie makers and particularly the beginner can thank Leo J. Heffernan for what is probably the most clearly written and simply expressed thoughts on the technique of 8mm and 16mm film editing.

His recent book, "Editing for Better Movies" is a publication of the Kalart Company, makers of home movie editing equipment in Plainville, Conn. He offers easy-to-follow suggestions on how to take the rough footage returned by the processor and ready it for showings to family and friends. The book is worth many times the price of 50c for the wealth of information contained in its 36 pages.

Lighting Equipment

J. C. MacAlister, Inc., 1117 No. McCadden Place, Hollywood 38, offers 'New Dimension in Controlled Studio Lighting,' a 12-page brochure describing the company's set lighting equipment and accessories. The purpose and use of each unit on the set is carefully detailed. Copies are free.

• • •

Wide Screen Booklet

A 12-page booklet that describes the several new methods of motion picture production and exhibition that came into use during and after 1952 has been published by the Society of Motion Picture and Television Engineers. Aimed at giving a comprehensive yet easily understood outline of present day techniques and the ways in which they differ from those that became "standard" during the late 1920s, the booklet makes no attempt to evaluate systems.

Copies may be had by writing the Society's headquarters, 55 West 42nd St., New York 36, N. Y.

• • •

Color Vocabularies

"The ISCC-NBS Method of Designating Colors and a Dictionary of Color Names," by Kenneth L. Kelly and Deane B. Judd, is a new 158-page circular (No. 553) available from the National Bureau of Standards. It is designed to assist the scientist, businessman, and layman to understand the different color vocabularies used in the many fields of art, science and industry.

The dictionary serves not only as a record of the meanings of the 7,500 individual color names listed but also enables anyone to translate from one color vocabulary to another.

Order from U. S. Government Printing Office, Washington 25, D. C. Price is $2.00.

• • •

Indoor Movies

"How to Make Beter Indoor Movies Easier" is title of 36-page booklet issued by Mayfair Lighting Company, Brooklyn 11, N. Y. Incorporated is a Mayfair exposure calculator and movie manual. Copies may be had from camera shops handling Mayfair lighting equipment or direct from the company.

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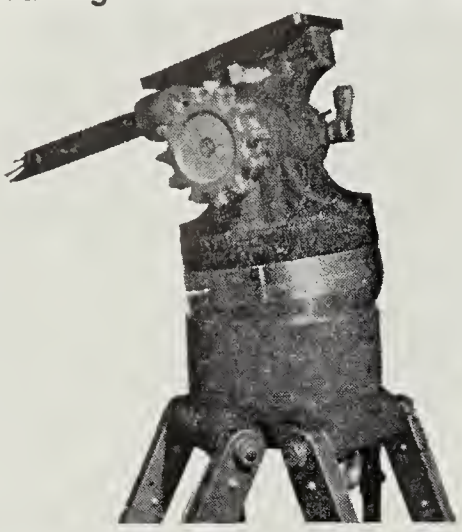
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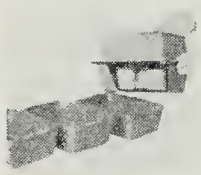
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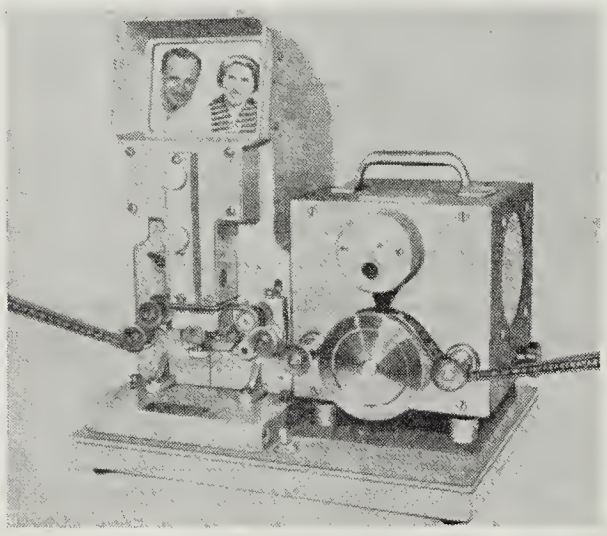
(Continued from Page 136)

era stores. Sample swatch and useful instructions are available free from above company.

S.O.S. Ediola Reader-Editor

S.O.S. Cinema Supply Corp., 602 West 52nd St., New York, announces it will have its popular Ediola Sound Reader and Picture Editor combination on display at the forthcoming SMPTE Convention in the Statler Hotel, New York, April 29th to May 4th.

Sound Reader features simple thread-



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Oxberry Animation Equipment

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(Continued from Preceding Page)

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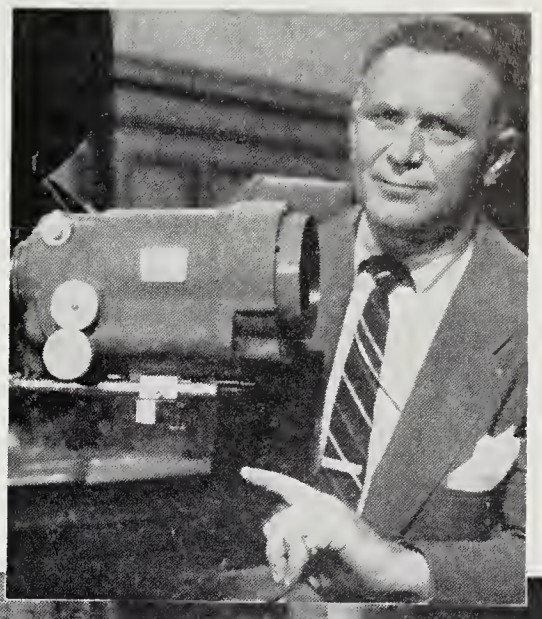
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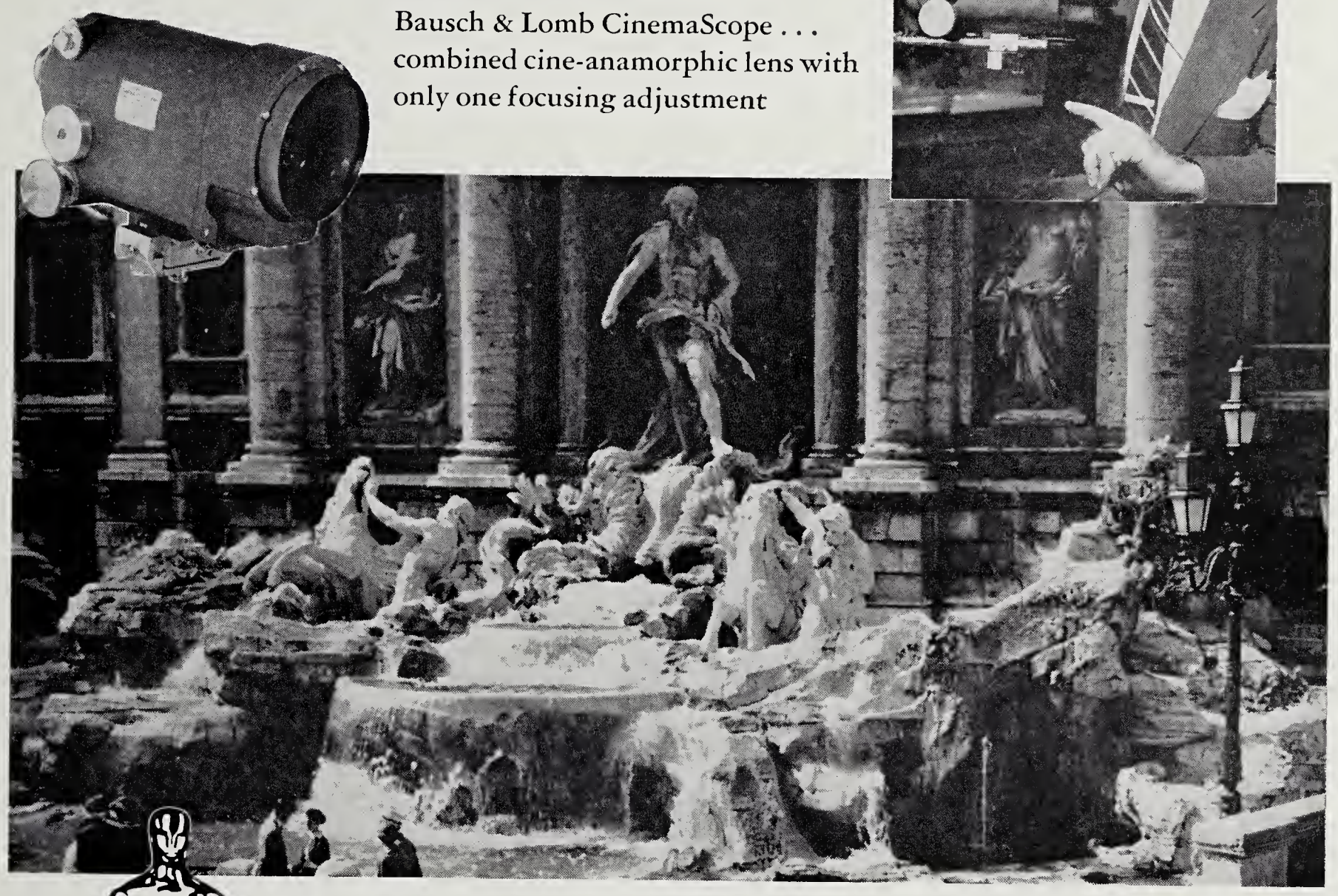
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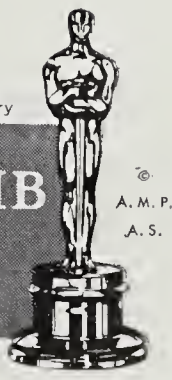
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cinematography in the 20th
Century-Fox production, "Three
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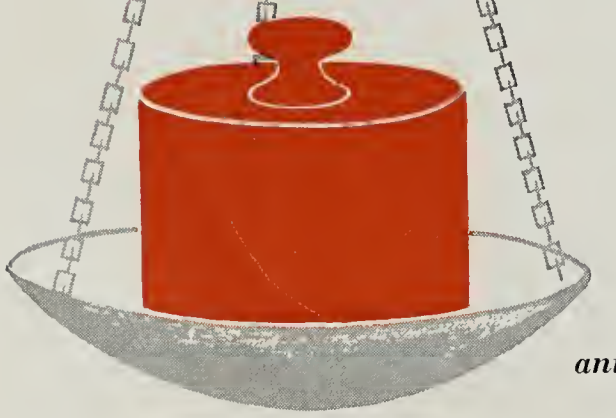


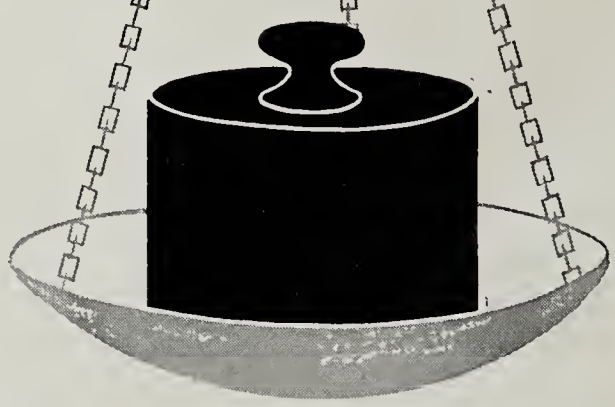
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Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



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25c
FOREIGN 35c

Manufacturer's Twenty Member Motion Picture Unit sets up to shoot Northrop F-89D oll-weother jet interceptor for sequences in Northrop Training Deportment film.

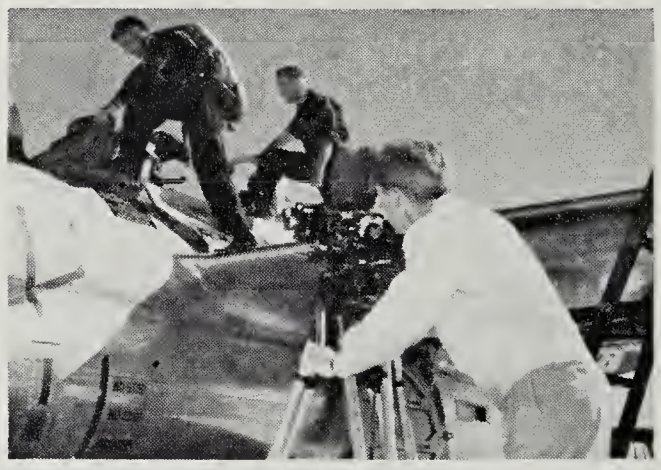
INDUSTRY'S USE OF 16MM CAMERAS BROADENS

Northrop Aircraft Demonstrates Expanded Industrial Use of Mitchell Cameras

Over 100,000 feet of film were shot last year by two 16mm Mitchell cameras operated by a full-scale motion picture unit at Northrop Aircraft. Operating daily throughout the year, these 16mm cameras provide impressive evidence of the rising role of professional motion picture equipment in American Industry today.

Northrop, a leader in airframe and missile manufacture, makes diversified use of their Mitchell cameras. Motion pictures range from employee activities to engineering test films—where re-shooting is impossible and where steady, accurately-framed film of superior quality is consistently delivered by Mitchell cameras.

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Alaska Bound test pilot Bob Love ond Columnist Morvin Miles being filmed by Mitchell comero for Northrop Public Relotions Deportment.

For Quality Control Film, Mitchell comero moves in for close shots of Scorpion F-89D.

104 Rocket Salvo of twin-jet F-89D is captured on 16mm Engineering Test film.



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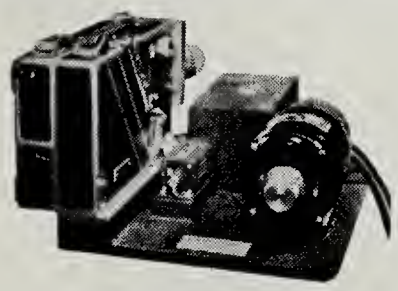


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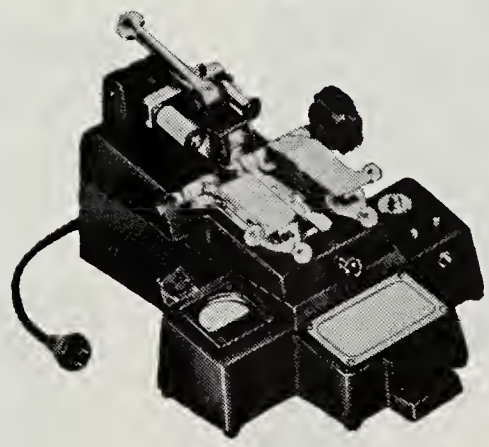


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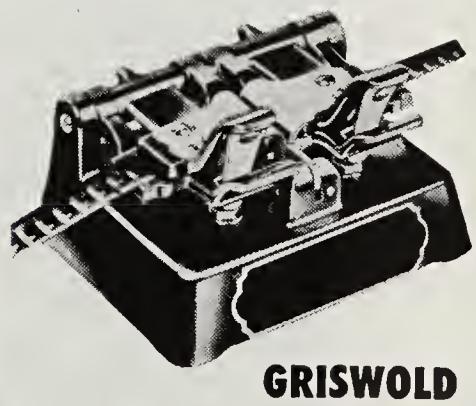
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PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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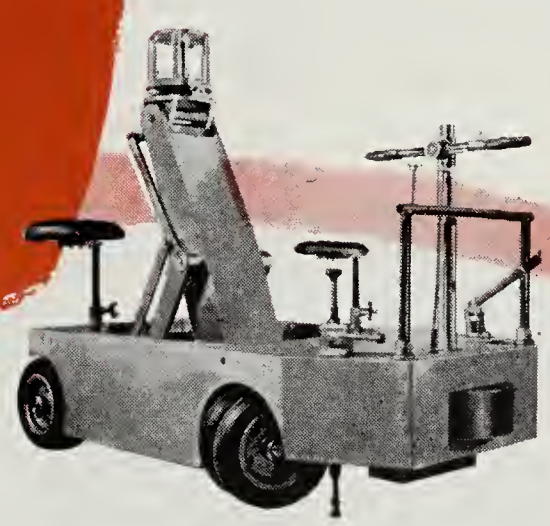
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News briefs about the A.S.C. its members, and important industry personalities



THE A.S.C.'s ACTIVE MEMBERS gathered at the Society's clubhouse last month for dinner and a reading of the President's Annual Report. Pictured here are some of the cinematographers about to start on the salad course. In front row, from left to right, are Paul Vogel, Arthur Edeson, Sol Polito, Harry Stradling and Robert Pittack.



FOLLOWING the reading of President's Annual Report of the Society's progress by President Arthur Miller, Treasurer Walter Strenge gave financial report for year 1955-56.



AN A.S.C. VISITOR last month was member Ted Pahle (left) who has been active in film production in Spain for past several years. Welcoming him to A.S.C. clubhouse is Society President Arthur Miller.



CHARLES ROSHER, A.S.C. (right) was also a Hollywood visitor last month. Here he is showing Hal Mohr, A.S.C., color transparencies of views on his beautiful estate in Jamaica.

ROBERT SURTEES, A.S.C., who did such a magnificient job of lensing "Oklahoma!" in wide-screen Todd-AO, is shooting another wide-screen "first"—"Raintree Country," in M-G-M's new 65mm process. Production involves a special camera utilizing 65mm color negative, which has been in process of development for past two years.

• • •

MILTON KRASNER, A.S.C., was shooting the only picture in work at 20th Century-Fox as March ended one of the busiest periods the lot has ever seen. Lull is temporary however. Scheduled to go before the Fox cameras this month are: "The Last Wagon," "One in a Million," "The Day the Century Ended," and "The Best Things In Life Are Free." Start of these productions will

(Continued on Page 198)

All art is but imitation of nature...

SENECA





Picasso's Head of a Woman courtesy Albert E. Lewin

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. . . and yet you, as the film artist, may depart from realism in order to achieve an effect— you may, in fact, improve upon nature.

We, as technicians, cannot improve upon you. Our goal is to realize your conception; to give you what you set out to get.

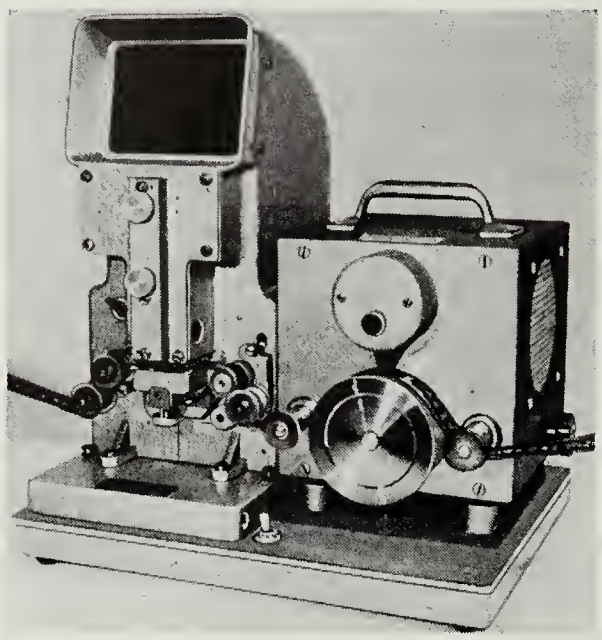
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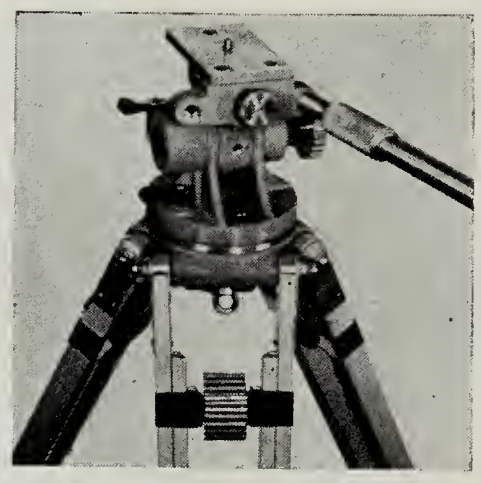
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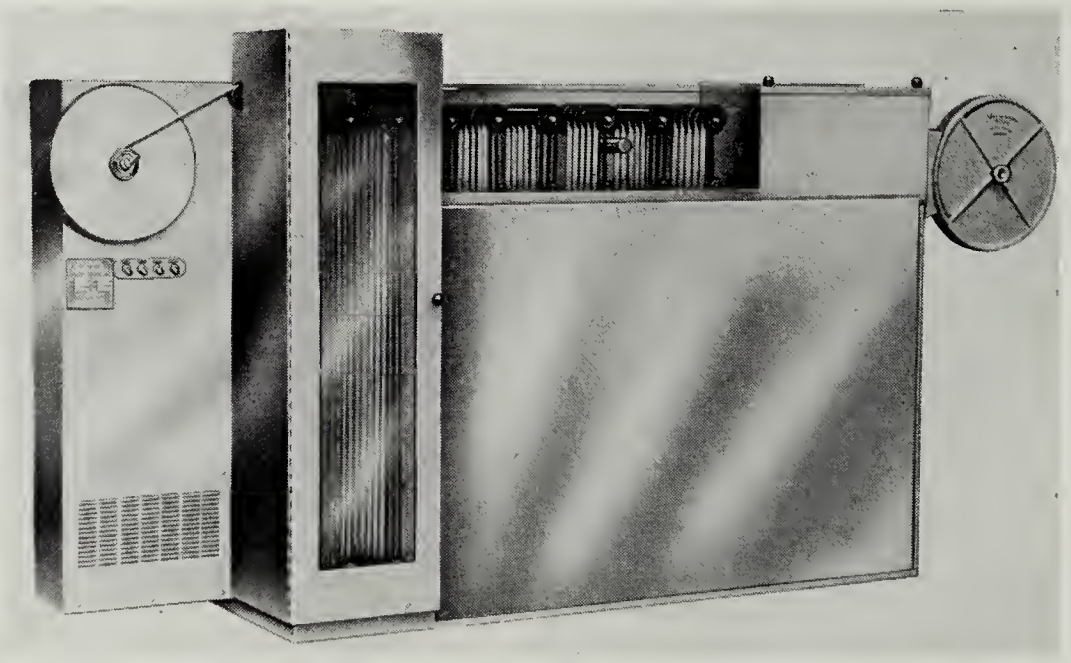
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(Continued from Page 194)

end temporary vacations for Leon Shamroy, A.S.C., Joe MacDonald, A.S.C., and Leo Tover, A.S.C.

• • •

ERNEST LASZLO, A.S.C., undertook his first assignment with a VistaVision camera when he started shooting "The Loves of Omar Khayyam" in Technicolor at Paramount Studios last month.

• • •

CUBA is locale of latest assignment for Lee Garmes, A.S.C., who is in that latin country directing the photography of "The Sharkfighters" in CinemaScope and Color for Samuel Goldwyn, Jr.

THE REACTIVATED RKO studios in Hollywood saw three major productions before the cameras at the close of March, with an A.S.C. man behind each camera. Joseph Biroc was shooting "Tension At Table Rock" in color; William Mellor was filming "Back From Eternity," and William Snyder was photographing "Beyond a Reasonable Doubt."

AMERICAN SOCIETY OF CINEMATOGRAPHERS

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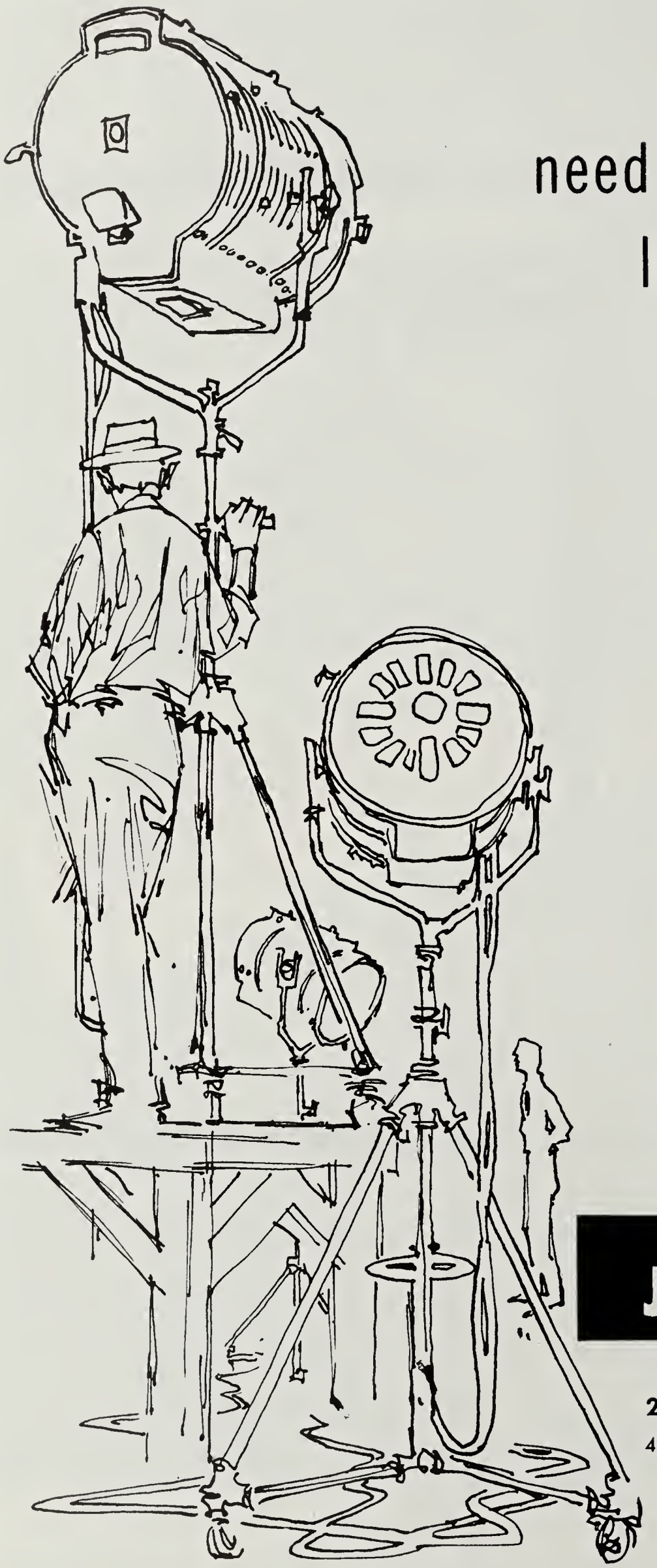
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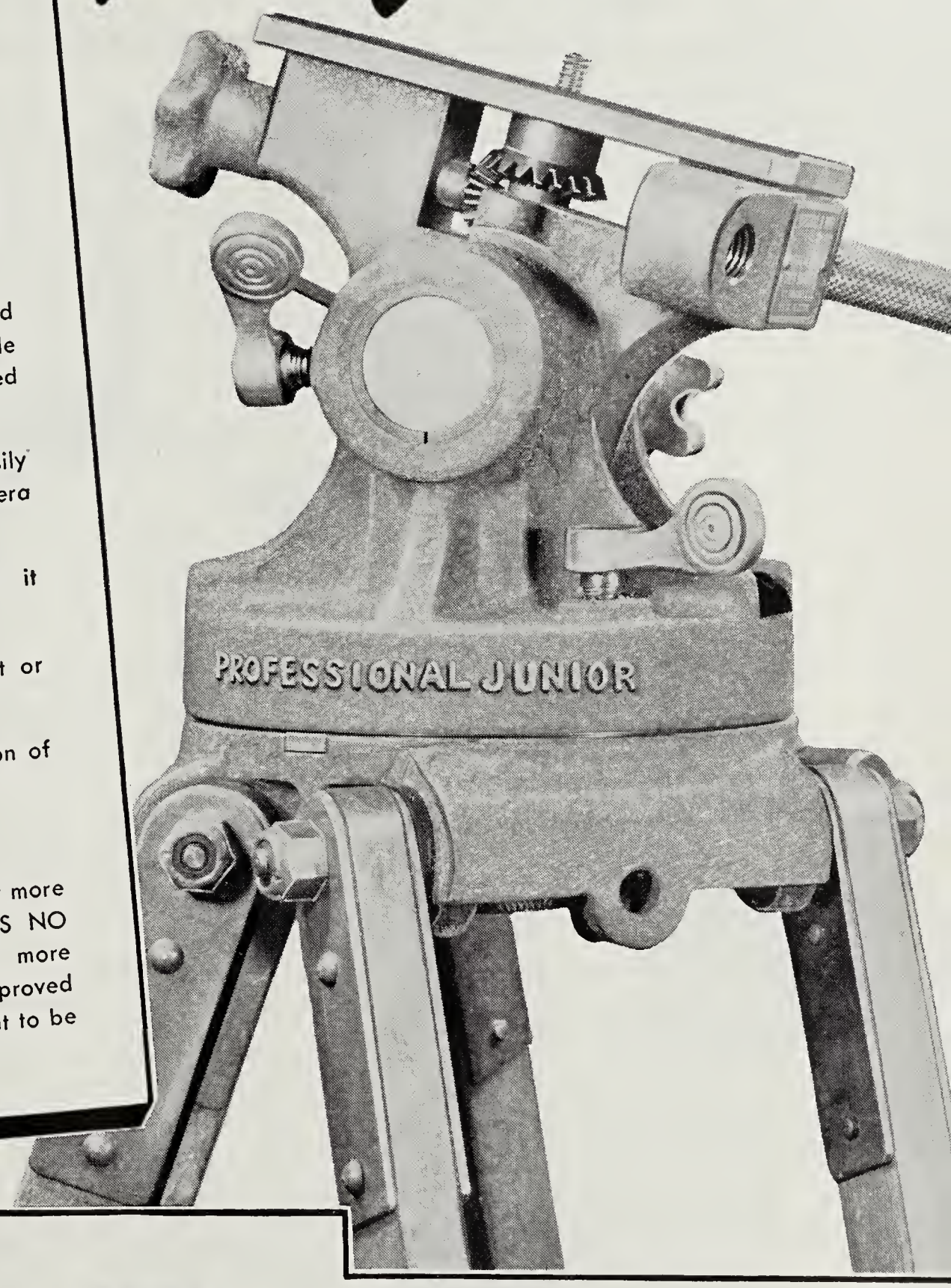
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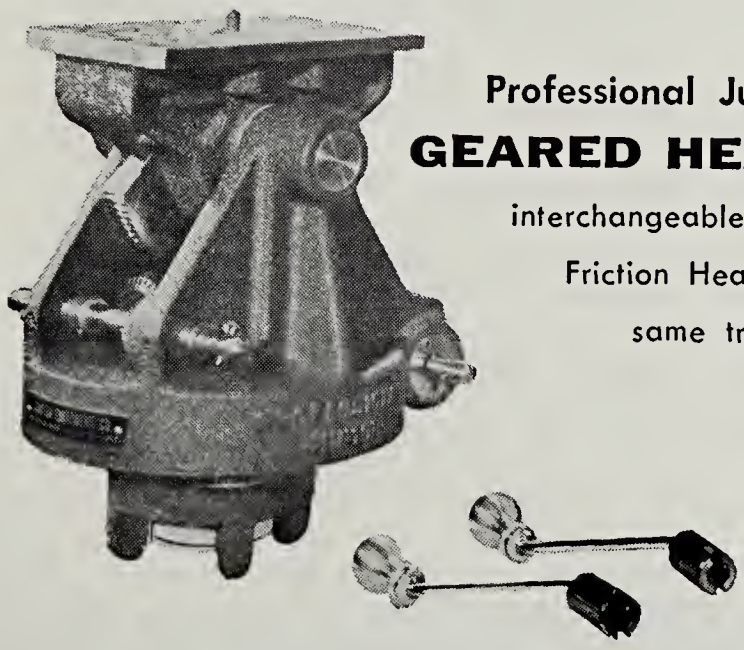
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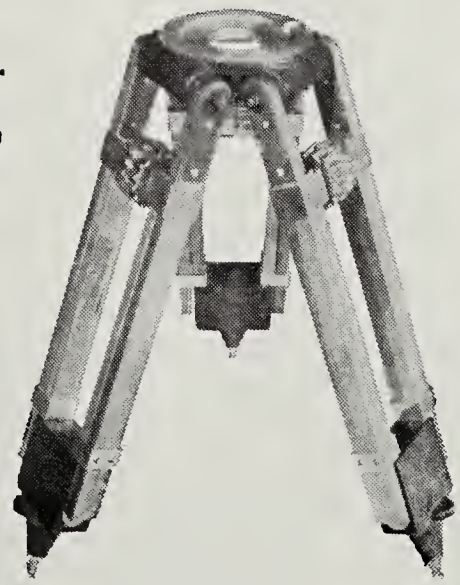
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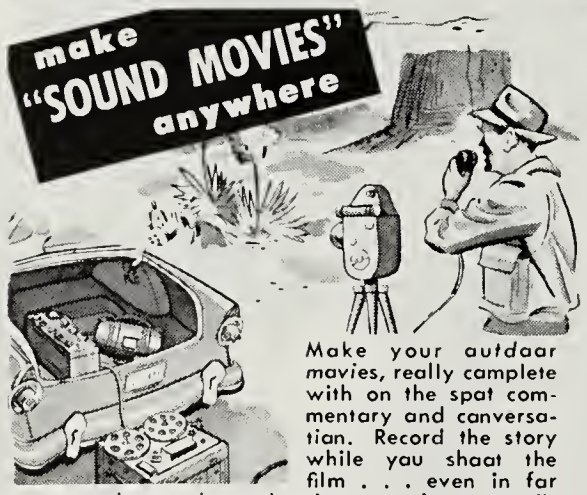
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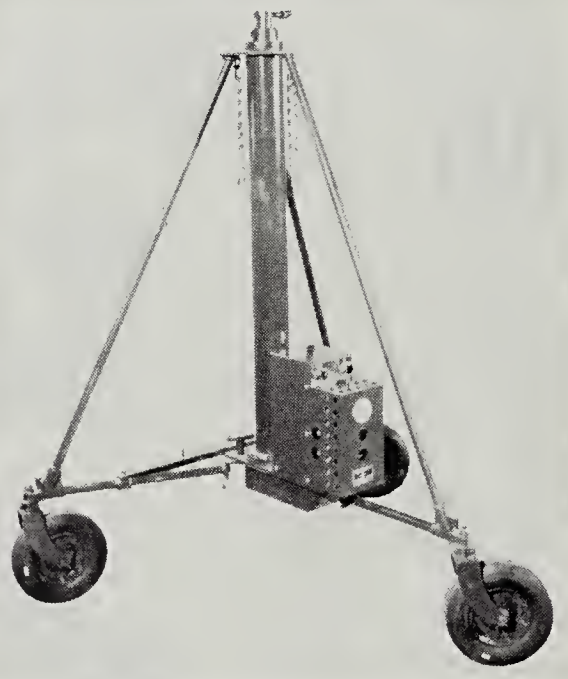
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Cine Camera Price Cut

Bell & Howell Company, Chicago, Ill., announces that price of its 8mm Wilshire cine camera has been reduced from $49.95 to $39.95.

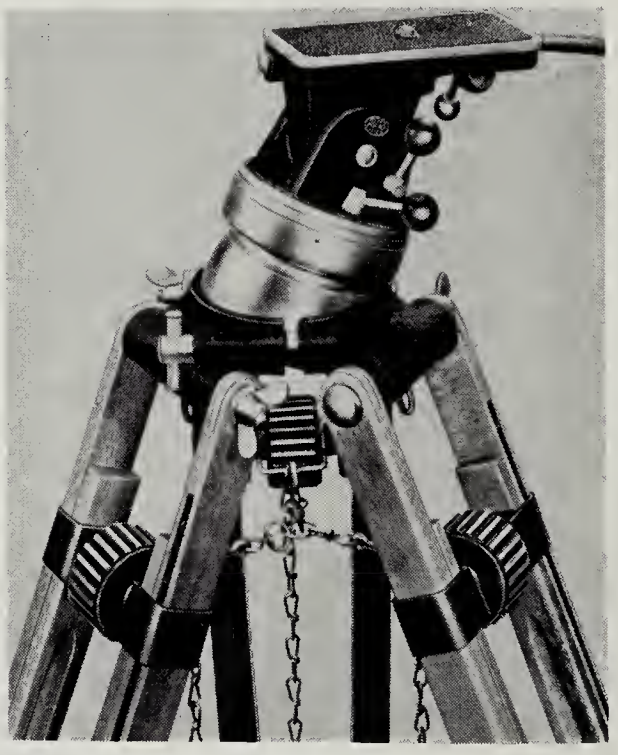
Camera features well-known Bell & Howell "Sundial" for setting exposure by dialing one of four common outdoor light conditions, and a large "picture-window" viewfinder. The camera's 19mm f/2.5 Comat universal-focus lens covers 56% more picture area than the conventional half-inch lenses for 8mm cameras. A 2½-time telephoto attachment is available as accessory equipment. The Wilshire uses 8mm roll film and requires no threading.

Remote Control Zoomar

Zoomar, Glen Cove, Long Island, N. Y., announces a new lens with a zoom range of 6-to-1. 20mm to 120mm focal length. Speed of lens is rated at f/3.9, said to be constant over the entire zoom range. Equipped with standard "C" mount, new Zoomar unit weights approximately 1½ pounds.

The basic unit has two flexible shafts attached which can be connected to remote manual or electric controls. Available accessories with miniature D.C. motors.

Basic price of lens without power control unit is $700.00.



Arri 16 Tripod

Kling Photo Corp., 257 Fourth Avenue, New York 10, N. Y., announces the new Arri 16 Tripod which features a hemispherical ball head, permitting user to level camera without adjusting tripod legs. Pan-tilt movements are individually controlled; calibrated leg scales facilitate quick and accurate setting of legs to uniform extension; adjustable anti-slip chains restrict leg spread; a single lock collar automatically secures legs with equal pressure on both shanks; and a patented universal tripod screw accommodates both American and foreign camera sockets.

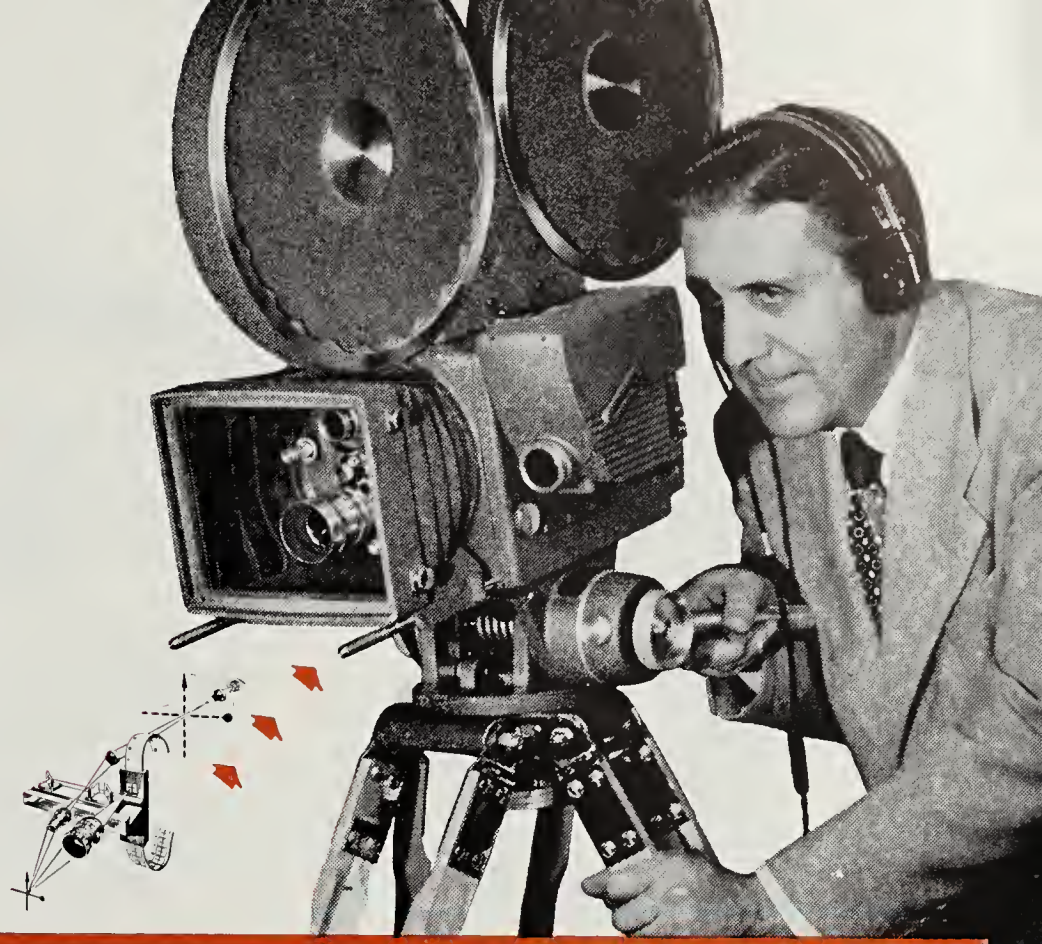
Working height ranges from 15 to 65 inches. List price is $175.00.

(Continued on Page 208)

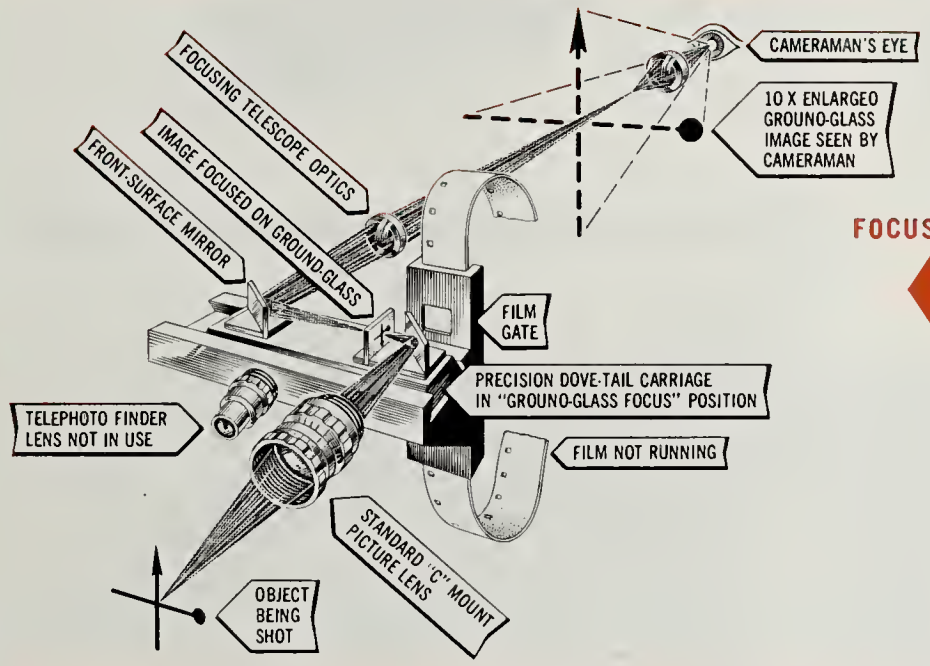
Auricon

"SUPER 1200" CAMERA

with Full-Frame Reflex Ground-Glass FOCUSING OPTICAL SYSTEM

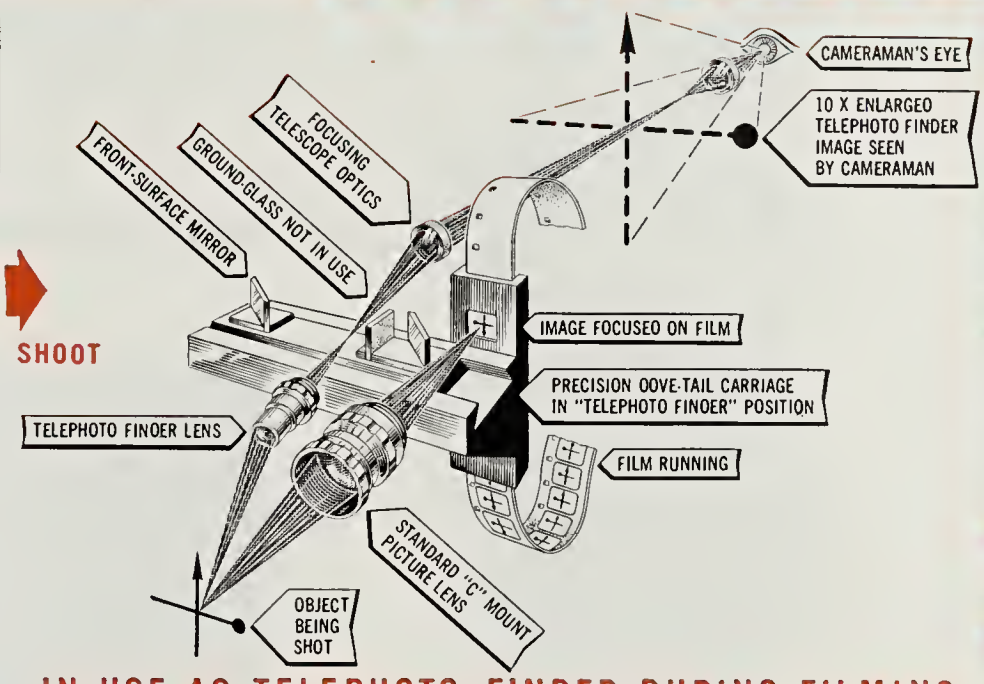


The unique and versatile features built into the 16mm Auricon "SUPER 1200" Sound-On-Film Recording Camera have prompted Producers and Cameramen to name the Super 1200 . . . "Finest 16mm Sound Camera ever built!" This Camera is "Self-Blimped" for whisper-quiet Studio work, has 33 minutes of continuous film capacity, Variable-Shutter or Kinescope "TV-T" Recording Shutter, plus the combined "Rifle-Scope" Telephoto Finder and Reflex-Focusing Optical Systems illustrated below. Its only equal is another Auricon "Super 1200"...



FOCUS

SHOOT



IN USE FOR FULL-FRAME GROUND-GLASS FOCUSING

"Super 1200" Reflex Ground-Glass Focusing-Frame indicates the field covered by any focal-length lens at all distances. A 10X enlarged Ground-Glass image is seen by the Cameraman, for needle-sharp critical focusing.

IN USE AS TELEPHOTO-FINDER DURING FILMING

No Camera-weight shift on tripod legs when moving from focus to film-shooting position with the "Super 1200." Camera-body does not shift to focus, or shoot film, as Optical-System Dove-Tail Carriage is only moving part!

THE CAMERA OF TOMORROW, HERE TODAY! ITS ONLY EQUAL IS ANOTHER AURICON "SUPER 1200"

Distributed by GraybaR — OFFICES IN PRINCIPAL CITIES

Auricon Hollywood

GUARANTEE

All Auricon Equipment is sold with a 30 day money-back guarantee.

You must be satisfied!

Model "CM-74B" Features include...

- ★ "Rock-steady" picture and High Fidelity Optical Sound-Track recorded on same film at same time, with "whisper-quiet" Camera & Sound Mechanism synchronously driven by precision-machined Nylon gears.
- ★ "Super 1200" is Self-Blimped for completely quiet Studio use.
- ★ Built-in Electric Camera Heater with automatic Thermostat-Control, provides reliable cold-weather Camera operation.
- ★ Geared Footage & Frame Counter with built-in neon-glow indirect light.
- ★ Two independent Finder systems (in addition to Reflex Ground-Glass Focusing through the Camera lens); a brilliant upright-image Studio Finder, plus the "Rifle-Scope" precision-matched Telephoto-Finder.
- ★ 600 and 1200 ft. film Magazines available. Up to 33 minutes continuous filming.
- ★ During picture exposure, your film runs through the Auricon "Super 1200" Film-Gate with the light-sensitive film emulsion accurately positioned on jewel-hard Sapphire Surfaces, an exclusive Berndt-Bach feature (U.S. Patent No. 2,506,765). This polished Sapphire Film-Gate is guaranteed frictionless and wear-proof for in-focus and scratch-free pictures, regardless of how much film you run through the camera!
- ★ Priced from $4,652.15 complete for sound-on-film; $3,755.65 without sound; choice of "C" Mount lenses and Carrying Cases extra.
- ★ Sold with a 30 day money-back Guarantee and One Year Service Guarantee; you must be satisfied. Write today for your free Auricon Catalog.

Auricon

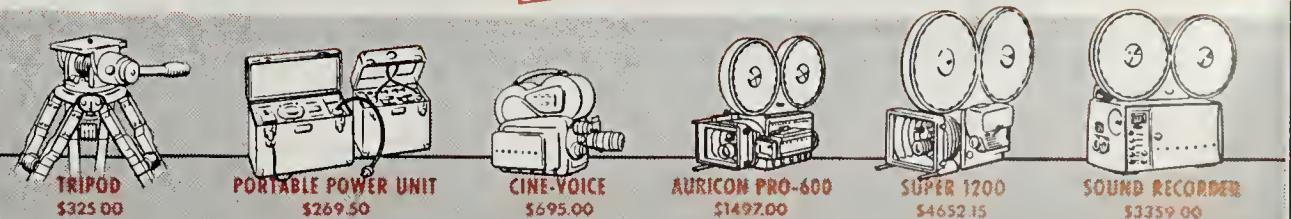
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BERNDT-BACH, INC.

6902 Romaine Street, Hollywood 38, California

MANUFACTURERS OF SOUND-ON-FILM RECORDING EQUIPMENT SINCE 1931

Auricon Hollywood



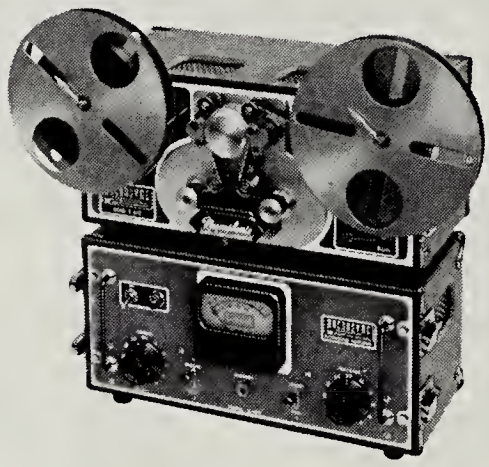


an answer

for every recording job—every budget

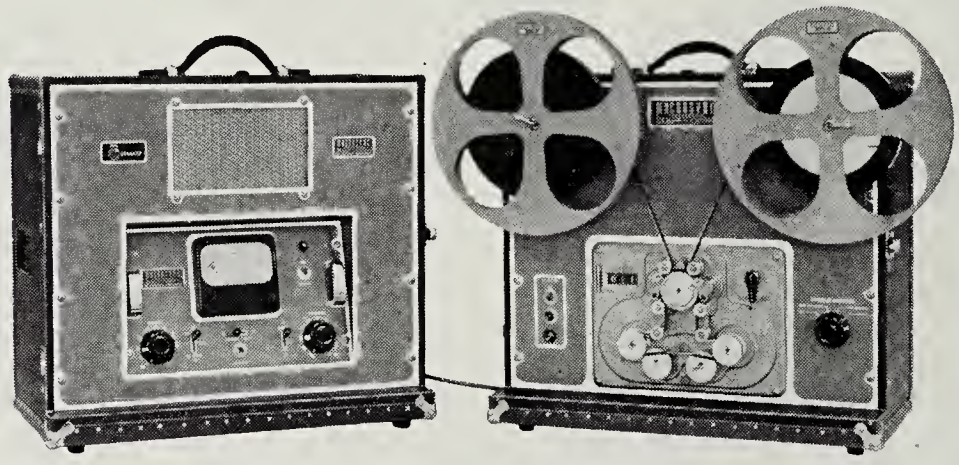
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from
$895.00
to **$1,796.00**



model
X-400-E-1 (16mm)

every recorder is a complete sound system!

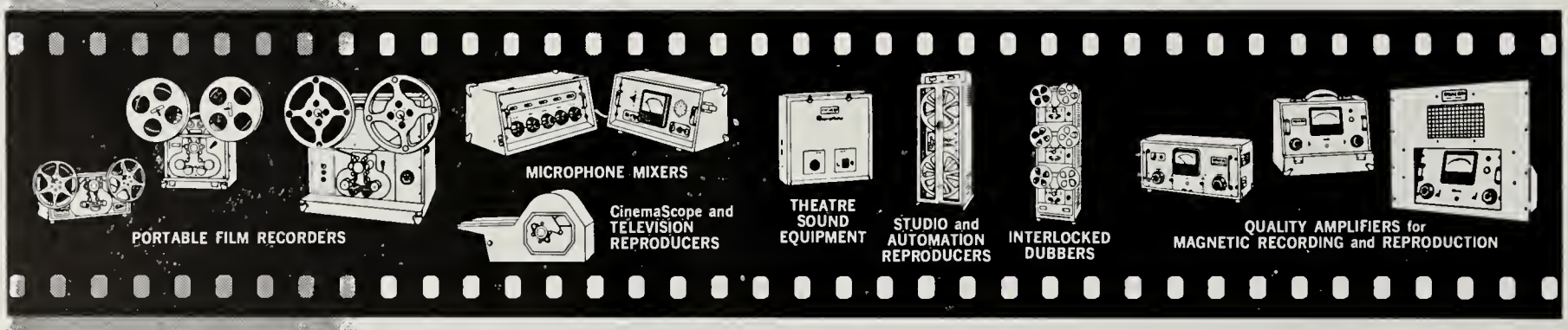


models
602-E-5 (16mm)
702-A-5 (17½mm)
135-A-5 (35mm)

16mm, 17½mm, 35mm — SINGLE CHANNEL — STEREOPHONIC — PORTABLE — STUDIO RACK MOUNT — SYNCHRONOUS or SELSYN MOTORS

Write for your catalog today!—Specifications unconditionally guaranteed!

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MAGNASYNC MANUFACTURING CO., Ltd., 5546 Satsuma Ave., North Hollywood 1, Calif.

MAGNASYNC SYNCHRONOUS FILM RECORDER
Magnaphonic SOUND SYSTEM

DEALERS

NEW YORK—Camera Equipment Co., 1600 Broadway, New York 19. JUdson 6-1420. Cable Address CINEQUIP.

CHICAGO—Zenith Cinema Service, Inc., 3252 Foster Ave., Chicago 25, Ill. IRving 8-2104.

SAN FRANCISCO—Brooks Camera Co., 45 Kearney St., San Francisco, Calif. EXbrook 2-7348.

CANADA—Alex L. Clark, Ltd., 3745 Bloor St., Toronto 18, Ontario. BElmont 1-3303.

BROOKS CAMERAS

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Prices subject to change without notice

NEW ARRIFLEX 16



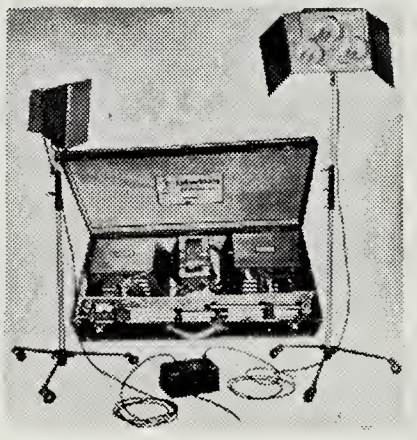
The only 16mm camera providing through-the-lens focusing and viewing during exposure, electric motor drive. Matte box, cables **$1725.00**

16mm Xenon f/1.9 lens **$170.00**

25mm Xenon f/1.5 lens **$170.00**

75mm Xenon f/2 lens **$200.00**

Zoomar lens 1" to 3" f/2.8 for Arriflex . . **$579.00**

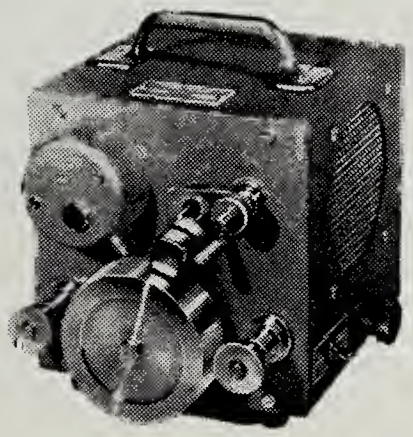


COLORTRAN JUNIOR KIT

Here, in one handy package, you have the equivalent illumination of 3000 watts of current from a 15 ampere fuse! Compact kit fits any car, contains everything you'll need for perfect lighting . . . a studio in a suitcase! Includes 2 Groverlite heads with 8 foot aluminum stands. All units have barn doors and diffusion slots for light control **$198.50**

SENIOR KIT— produces equivalent of 5000 watts illumination from a 30 amphere fuse **$265.00**

SPOT KIT— Contains 3 spotlights with a Broad or Junior, plus 4 stands. Snoots and diffusion for spots . . **$313.25**



PRECISION SOUND READERS

Made by Precision Laboratories . . . your guarantee of the finest in sound editing instruments. Simple threading . . . polished stabilizer drum with needle bearings, with a surface which cannot damage film. Film rollers machined to conform with SMPTE standards, and equipped with oilless bearings . . . precision ground shafts . . . dimensions 6" x 6" x 7½."

Amplifier: 117 volts — 60 cycle — AC. Power output — 4 watts. Heavy duty Alnico V speaker . . . safety fused . . . prefocused socket . . . pilot light . . . 6 ft. heavy duty cord.

Optical Model 600 — 16mm and 35mm . . **$185.00**

Magnetic Model 700 — 16mm, 17.5mm, 35mm and ¼ inch **$198.00**

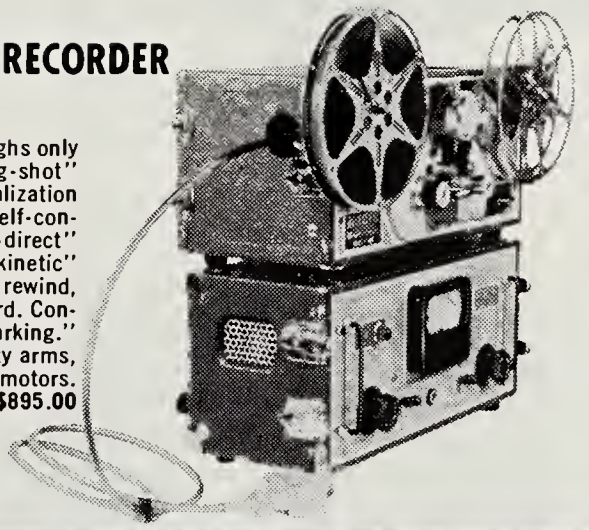
Optical-Magnetic Model 800 — 16mm, 35mm and ¼ inch **$259.50**

West's Largest Selection

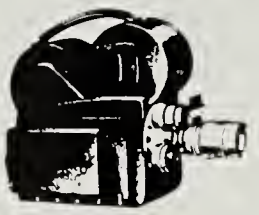
Budget Terms Available

MAGNASYNC X-400 RECORDER

A complete sound system that weighs only 27 lbs! Features high gain "long-shot" microphone channel. Dialog equalization for "speech-music" selection. Self-contained playback system for "film-direct" monitor. Famous Magnasync "synkinetic" precision film transport. High speed rewind, sync speed reverse and fast forward. Convenient arrangement for "sync marking." Footage counter, extended capacity arms, "quick-detach" mount for special motors. Unconditionally guaranteed! . . **$895.00**



AURICON



16mm CINE-VOICE

AURICON PRO-600

16mm optical-sound-on-film; self-blimped; sync motor drive for single or double-system recording; Electromatic take-up, film-flow without friction clutches or belts. Various combinations of accessories available. **$1165.00**

AURICON CINE-VOICE

popular-priced 16mm camera that photographs a sound track, perfectly lip synchronized with the picture — to be played on any 16mm sound projector. Single-lens model **$695.00**

Turret model for 3 lenses **$784.50**

AURICON "SUPER-1200"

16mm sound-on-film camera (self-blimped) with 3-lens turret for "C" mount lenses. 1200 ft. capacity for 33 minutes recording time. **$3319.25**



SUPER 1200

AURICON PAN-TILT professional tripod, wgt. 27 lbs. **$325.00**

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BROOKS CAMERAS

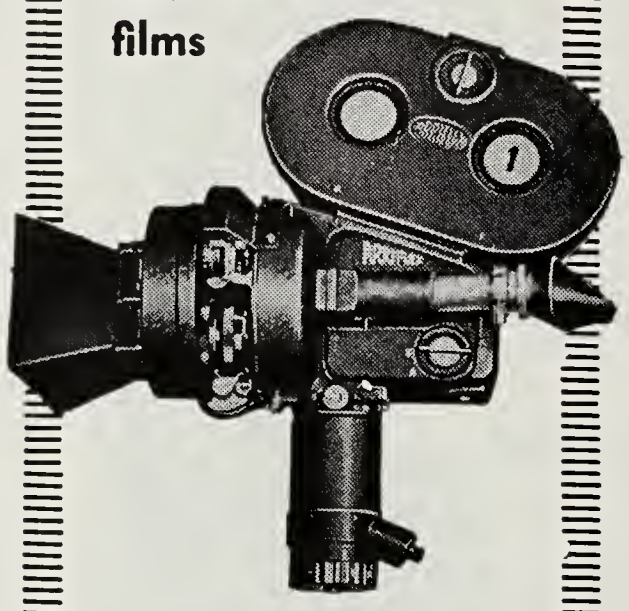
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ARRIFLEX

New 35 mm Model 2A
With 180° Shutter

A TRULY GREAT CAMERA

for TV, Newsreel and commercial films



For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200' or 400' magazine. Write for free folder.

Blimp now available.
16mm ARRIFLEX also available.

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CAMERA EQUIPMENT CO.
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INDUSTRY NEWS

Depth, clarity, less grain in new Technicolor process

IMPROVED PROCEDURES in the production of color release prints by Technicolor Motion Picture Corporation was reported last month by Dr. Herbert T. Kalmus, president and general manager of the company.



DR. KALMUS

Since inception of of the company, Technicolor has developed and provided the industry with six color processes.

(1) A two component additive process (1916 to 1923);

(2) A two component subtractive process, double-coated (1923 to 1927);

(3) A two component dye transfer (imbibition process) (1928 to 1931);

(4) A three component dye transfer (imbibition process) (1932 to 1954);

(5) Contact color positive prints (for example color positive prints for "The Robe"); (1953);

(6) Improved Technicolor Process. (1954).

All prints made by these Technicolor processes have borne the Technicolor trademark and Technicolor has controlled their quality.

The newest process, announced by Dr. Kalmus, is an improved three-component dye transfer imbibition process embodying the following three components:

(1) New matrix stock

(2) New blank stock

both applicable for the manufacturing of all Technicolor imbibition prints.

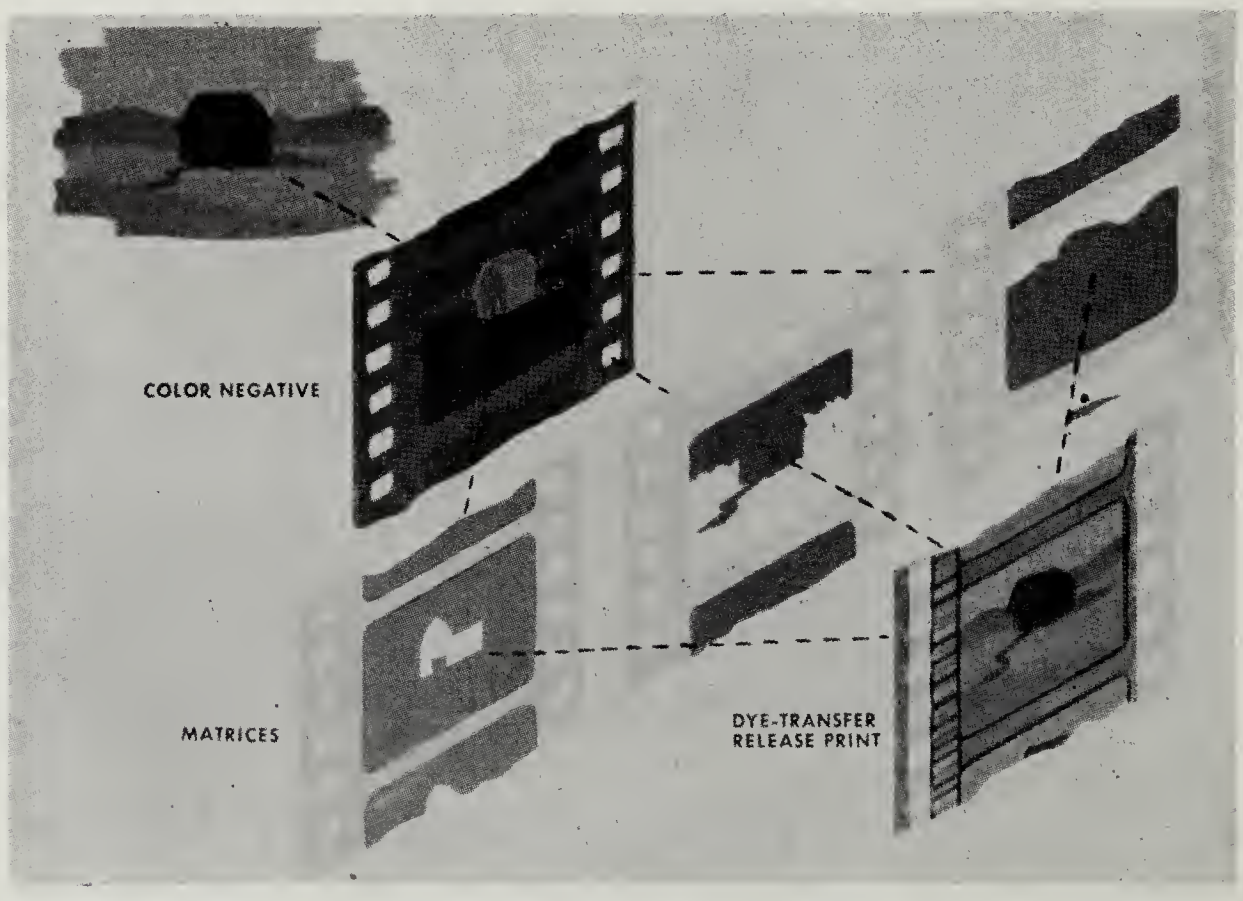
(3 Improved optical printing procedure which is applicable for the manufacture of all Technicolor imbibition prints from specially treated negative.

All three are applicable for use with large area negatives with or without the use of anamorphic or squeeze lens on camera, on printer, or both.

This improved Technicolor process may employ one or more or all of the above five features. The first three improvements or modifications are concerned entirely with the imbibition method of print manufacture and are handled entirely within the Technicolor laboratories, according to Dr. Kalmus.

"Last year," he said, "we made some prints using only the first two of the five steps, namely, the new matrix stock and the new blank from normal 35mm negative. A test made this way of the subject 'Soldier of Fortune' was shown to most of our customers. This was very

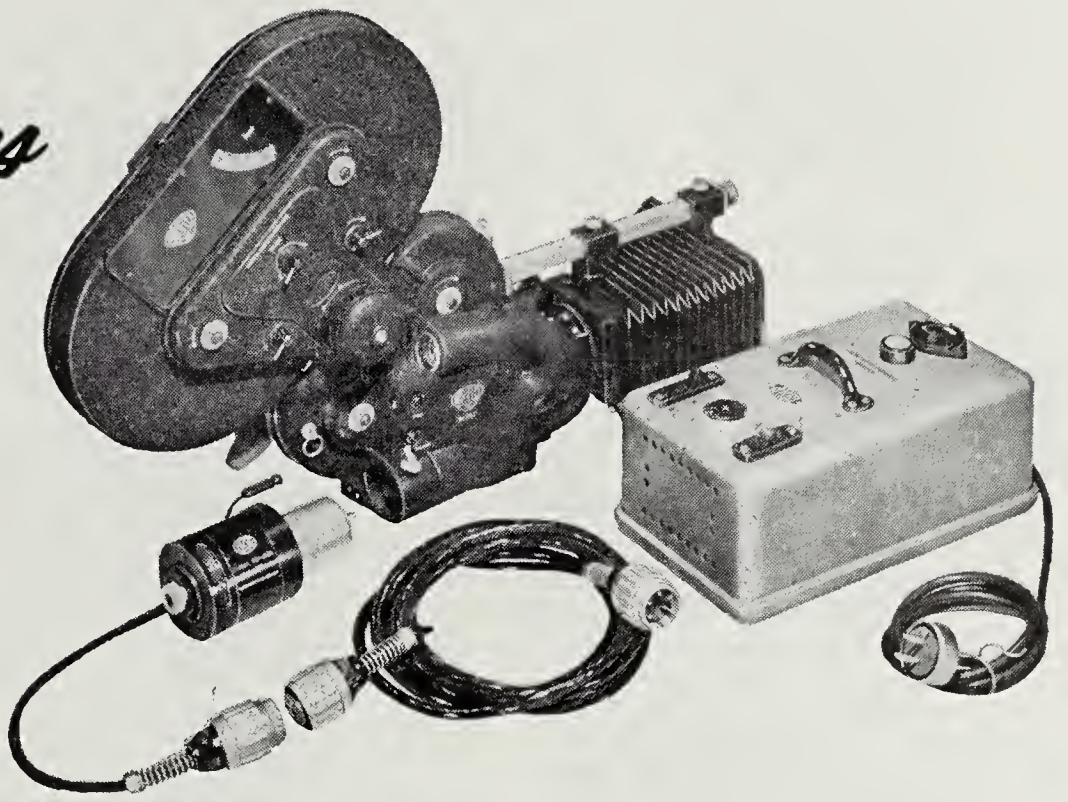
(*Continued on Page 210*)



ABOVE DIAGRAM shows steps in Technicolor procedure of making dye transfer print from color negative. Three matrices are printed and subsequently dyed, then used to make the release print. (Reproduction of this illustration is from color halftone and coarse screen shown does not appear on the film itself.)

New Accessories for the

ARRIFLEX 16

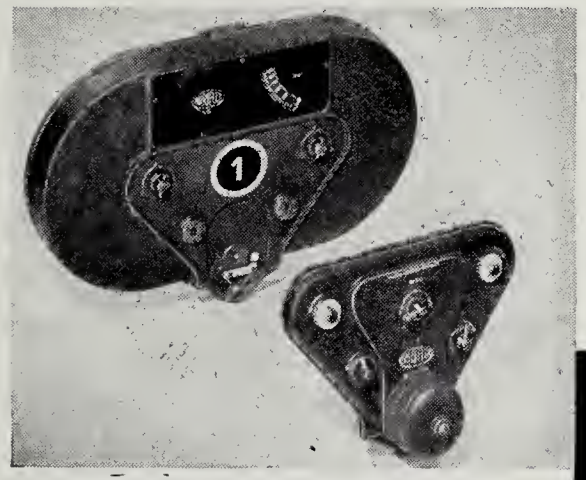


400-foot FILM MAGAZINE

SYNCHRONOUS MOTOR

ANIMATION MOTOR

Enthusiastic users everywhere have hailed the Arriflex 16 as the outstanding camera in the 16mm field. Now, with the extra convenience of the 400-foot Film Magazine, the split-second timing of the Synchronous Motor and the added utility of the Animation Motor — it is certainly the most versatile camera, capable of filling every need in the studio or on location.



400-foot FILM MAGAZINE

(shown with motor detached)

A compact, single-compartment, displacement type magazine for 400-foot darkroom loads (on cores) and 200-foot daylight spools.

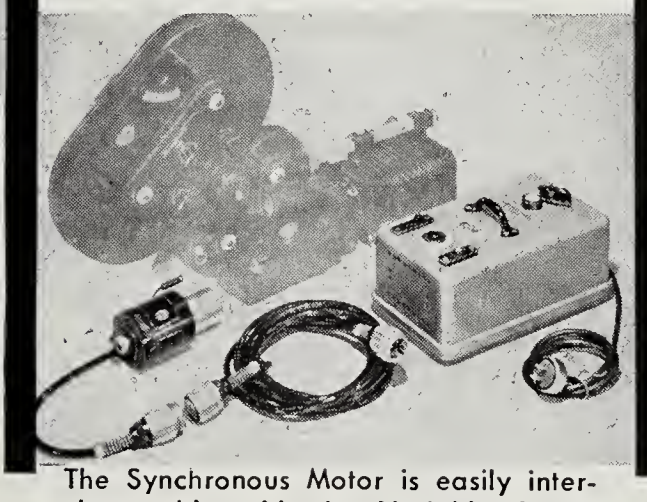
No belts are employed. A Torque Motor — detachable and interchangeable for use with several magazines — drives the take-up through a gear transmission with the correct tension regardless of the amount of film on the take-up spindle.

Operates on 6-8 volts DC, from the power supply used to operate the camera. Electrical contact is made as magazine is attached to camera. The Torque Motor is equipped with a forward-reverse switch. Each magazine has a footage counter — and is numbered for identification.

400-foot FILM MAGAZINE (less Torque Motor).....**$120.00**

Interchangeable Torque Motor only.....**175.00**

SYNCHRONOUS MOTOR FOR 110 V. AC

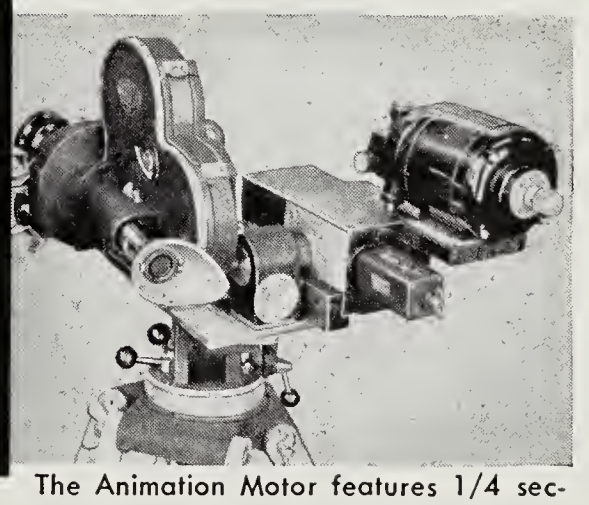


The Synchronous Motor is easily interchangeable with the Variable Speed Motor, supplied as standard equipment. Unusually light and compact, the Synchronous Motor can be used on the camera for hand-held shooting.

The motor is furnished with its own 110 volt, 60 cycle AC power supply. Output to the camera motor is 42 volts, 60 cycles AC and to the Torque Motor on the magazine (when used) 8 volts DC.

SYNCHRONOUS MOTOR (110 V. AC, 60 cycles—24 frames per second) with power supply and cable.....**$395.00**

ANIMATION MOTOR



The Animation Motor features 1/4 second exposures for either single frame, or continuous shooting at 60 frames per minute. A built-on frame counter registers up to 4 digits.

The Animation Motor can be used manually, with a foot switch, relay, or an intervalometer. The unit operates on 110 volts AC, 60 cycles, but can be supplied for operation at other voltages and frequencies on special order.

Complete ANIMATION MOTOR Assembly with Remote Control.....**$595.00**

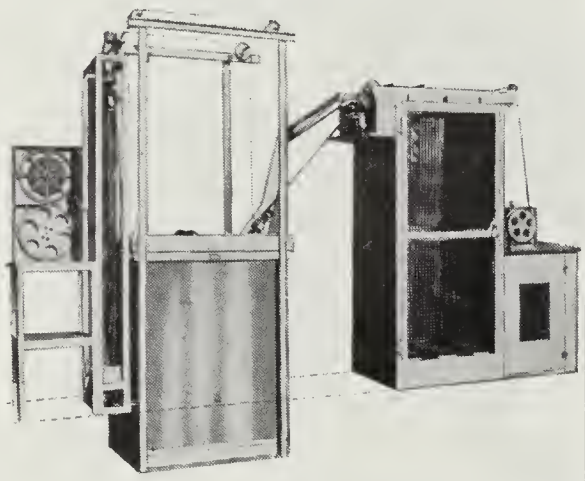
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PROFESSIONAL PROCESSORS

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Large capacity one-man machines that show a profit.

Flexible
Reliable
Reasonably priced

Built by a laboratory man for the laboratory man. Write for catalog today.

METAL MASTERS
5599 University Ave.
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CINEKAD SHOULDER BRACE

This scientifically-engineered shoulder brace is made of light-weight aluminum. It can be used to support all 16mm and 35mm hand-held cameras, such as Cine-Special, Balex, Filma, Arriflex, Aurican, DeVry, etc. This guaranteed-steady brace affords perfect panning and tilting. It eliminates the necessity of a heavy tripad. This new invention brings you a simpler way af shaating. Weighs 7 ozs. and is small enaugh to fit the pocket.

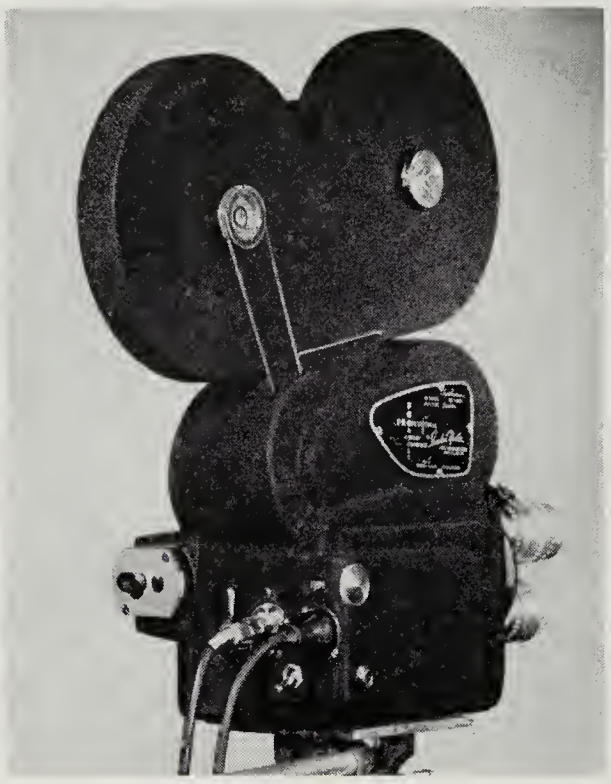
* **Adjustable to Any Arm Length**
* **May Be Used on Either the Left or Right Shoulder**
* **The Brace Is Rubber Fitted**
* **Eliminates Need for Trigger Handle**

Ten-day Money-back Guarantee!
Write For Prices and Literature

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WHAT'S NEW

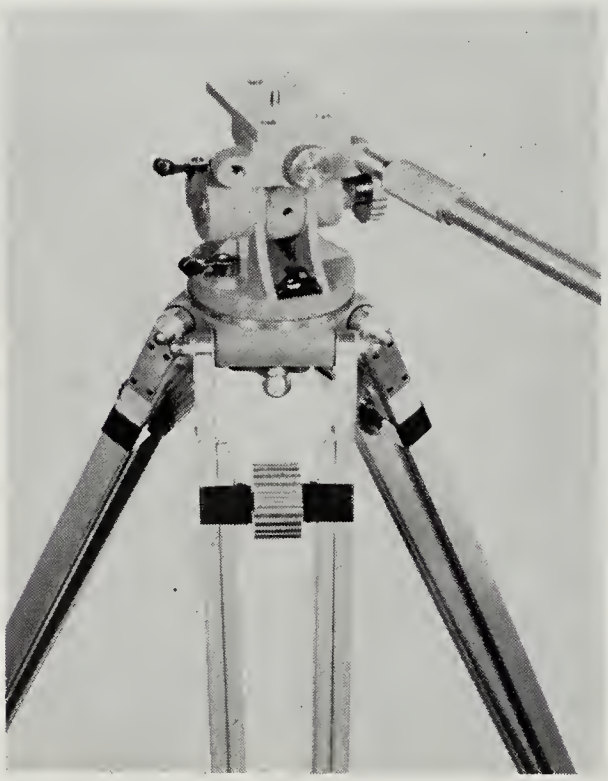
(Continued from Page 202)



Cine-Voice Conversion

Florman & Babb, 68 West 45th Street, New York 36, N. Y., announce a new 400-foot conversion for the Auricon Cine-Voice camera, which is said to be the first which does not cut the head off the camera nor require an auxiliary motor. Special needle bearings in the take-up system and ball-bearing shafts in the 400-ft. magazines are said to make for an extremely smooth. and reliable job.

Other features include: silenced veeder footage counter; built-in behind-the-lens filter slot with 2 filter holders; built-in headphone jacks; and refinishing of camera in black crackle enamel.



S.O.S. Professional Tripod

S.O.S. Cinema Supply Corp., 602 West 62nd St., New York City, announces a new medium-weight tripod

(Continued on Page 266)



ANNOUNCING THE PRO CINE II TRIPOD

The F&B Pro-Cine tripod, which has been the leading tripod in the medium weight field for almost two years, shows its continuing supremacy by undergoing a complete re-designing.

Several new improvements have been incorporated which are not only revolutionary in tripod design, but will serve to make the PRO-CINE II the most versatile, efficient and beautiful tripod in the market.

Still a full jump ahead of the field, which is only now beginning to recognize . . . and copy . . . some of the advanced modern design and versatility of the PRO-CINE; our *new* design and the new features built-in to the PRO-CINE II tripod are unconditionally guaranteed to surpass anything on the market.

May we urge that all prospective tripod buyers wait for the new PRO-CINE II before placing their orders . . . or if you are like some of our good customers and friends, who have the faith and confidence in F&B bred by years of fair-dealing; order your new PRO-CINE II <u>now</u> to insure earliest delivery.

We'd love to tell you about some of the new features now . . . but you'll pardon us for holding back for a while . . . anyway, we expect to be delivering new PRO-CINE II by May 15th.

P.S. The price is still $145.00.



A couple of new products of which we are pardonably proud are our new "CINEVOICE 400" conversion, which is described at length on the next page . . . and our new "POLECAT".

Don't turn your nose up at these "POLECATS", because what they are is a new and wonderful way to support photographic lights, backgrounds and microphones without the clutter of sprawling legs and heavy iron bases, and without special construction.

POLECAT is a strong but featherweight telescoping aluminum column with a spring in the top. Adjust it to your ceiling; then spring it in and out of place as you please. It can't be knocked over, and it takes up no more floor space than a silver dollar. Write for literature.



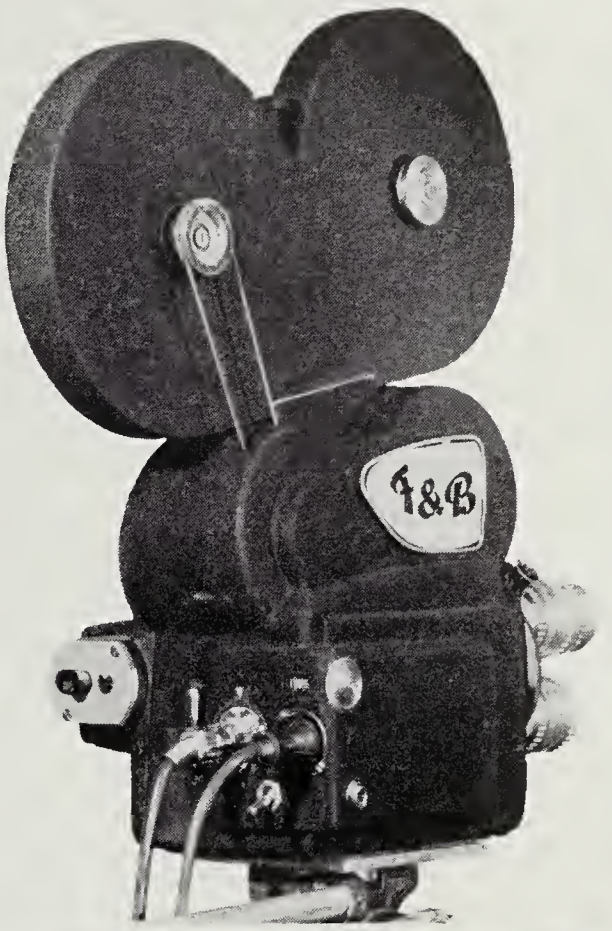
All of our products and our smiling faces as well, will be on display at the SMPTE convention at the Statler in New York beginning April 30. See you there . . .

NEW F & B "CINEVOICE 400"

F&B's new Cinevoice CONVERSION for 400 ft. magazines . . .

DOES NOT cut down your camera . . .
DOES NOT require an auxiliary motor . . .
CAN STILL be used as the original 100 ft. camera when necessary.

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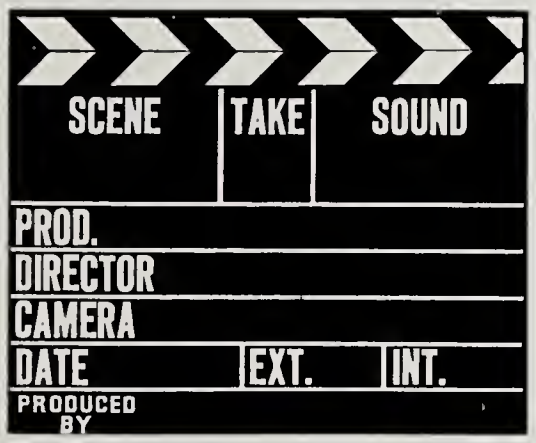
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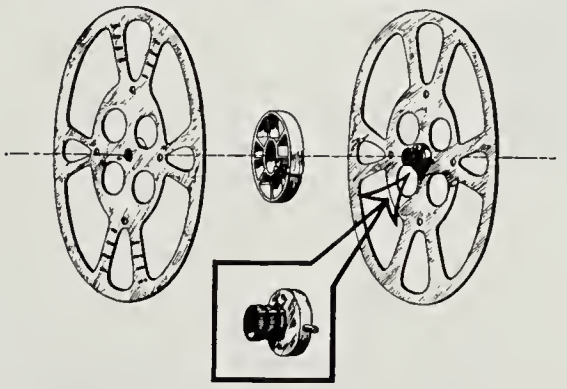
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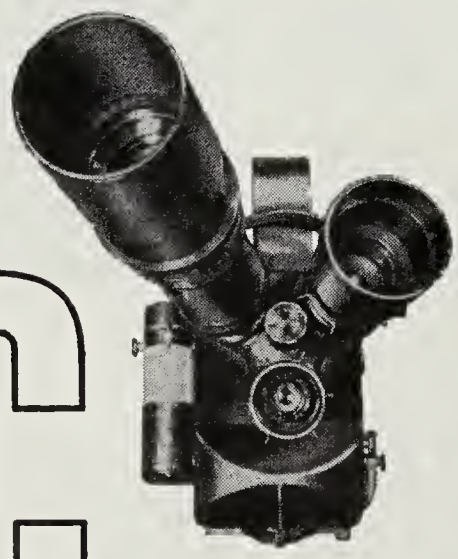
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(Continued from Page 208)

much improved over what we were making before the advent of the new matrix stock and the new blank but not nearly so improved as when we employ item (3), the improved optical printing procedure. However, with only the first two of the five steps the prints have been very well received.

"We are now preparing prints employing the first three improvements: new matrix stocks, new blank and the improved optical printing procedure which should be valuable to our customers when no increased area negative is involved and where imbibition prints of the highest quality are desired because of their color characteristics, their somewhat lower price or for any reason whatsoever. Prints made this way will be ready for showing in the near future.

"With respect to item (4), namely, large area negative, we believe that any of the currently employed large area negatives such as 65mm, 55mm and 8-perforation double-frame 35mm can be used. The use of an anamorphic or squeeze lens on the camera is entirely at the producer's discretion and Technicolor's use of an anamorphic or squeeze lens on the printer depends upon the kind of release prints the producer desires."

Augmenting Dr. Kalmus, remarks was a screening of Technicolor prints which were in the CinemaScope aspect ratio and embodied all five steps of the improved process. The company used the 54-foot screen on RKO Studio's Stage Three for the demonstration, given for the press and industry executives.

The films shown employed partial squeezes in both the photography and the printing—that is, partial anamorphic treatment was given in both stages. It was explained that when this method is followed, there is less distortion in the release prints.

The films shown were photographed on Eastman Color negative with an 8-perforation double-frame (VistaVision type) camera because it was available, required no special equipment in the laboratory, inasmuch as standard 35mm film is employed, nor does it require any special manufacturing demands of the raw stock manufacturer, it was pointed out.

"Wherever we have shown or discussed what we are doing in the industry," said Dr. Kalmus, "it has engendered a very considerable interest. If we had the equipment ready and available we could probably start a dozen pictures in the next two or three months. Some are interested because they are fearful of wide dimension negative. The difficulties with it may not be insuperable but they are great. Others are interested in our very much improved Technicolor imbibition print from standard size 35mm negative; others are interested because of saving in cost employing imbibition prints.

"We have made some approximate calculations which indicate that for a picture employing 150,000 screen feet of negative stock the cost of the stock and the negative developing, rush prints, protective separation masters and 35mm answer print runs something as follows: With standard 35mm about $55,000; for the double-frame 8-sprocket 35mm about $85,000; for the 65mm five-sprockets about $105,000; and for the 55mm 8-sprockets about $137,000.

"Where we have employed large area negative, Technicolor imbibition prints made by this improved Technicolor process evidence excellent visibility, definition, a minimum of grain and increased depth of focus combined with typical Technicolor superb color quality and lower print cost to the producer," Dr. Kalmus concluded.

• • •

A New Major Producer

On the basis of the reviews accorded its first production, "The Searchers," starring John Wayne, a brand new film production company in Hollywood has gotten off to an auspicious start.

When C. V. Whitney formed C. V. Whitney Pictures Inc., he chose as his executive producer, Merian C. Cooper and gave him one basic instruction: "Get the Best."

His first move was to purchase a good story—"The Searchers," a novel by Alan Le May. Then he signed Frank Nugent to write the screen play. Nugent has twice won the Screen Writers' Guild Award—for "The Quiet Man," and "Mr. Roberts." He also scripted "Fort Apache" and "She Wore a Yellow Ribbon"—both top-notch productions.

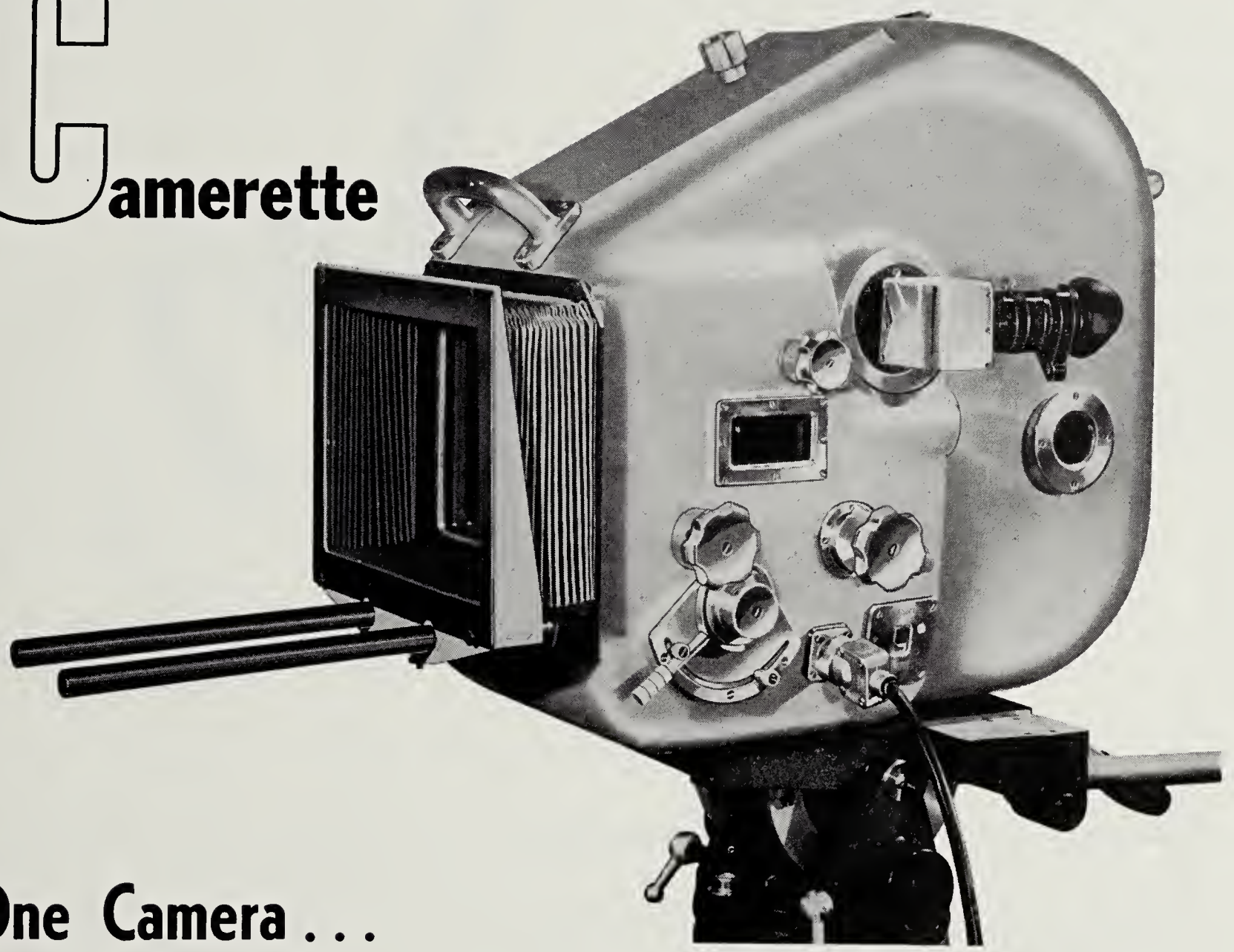
To get the "best" director, Cooper naturally signed his old friend and associate John Ford, and this led inevitably to John Wayne as the star.

Winton Hoch, A.S.C., has been associated often with all of these men, and it followed that he was the logical choice for the man to direct the photography of "The Searchers." Hoch won the Academy Award for the color photography of "She Wore A Yellow Ribbon," which John Ford directed for Merian Cooper.

So . . . how can they miss?

(Continued on Page 266)

Camerette



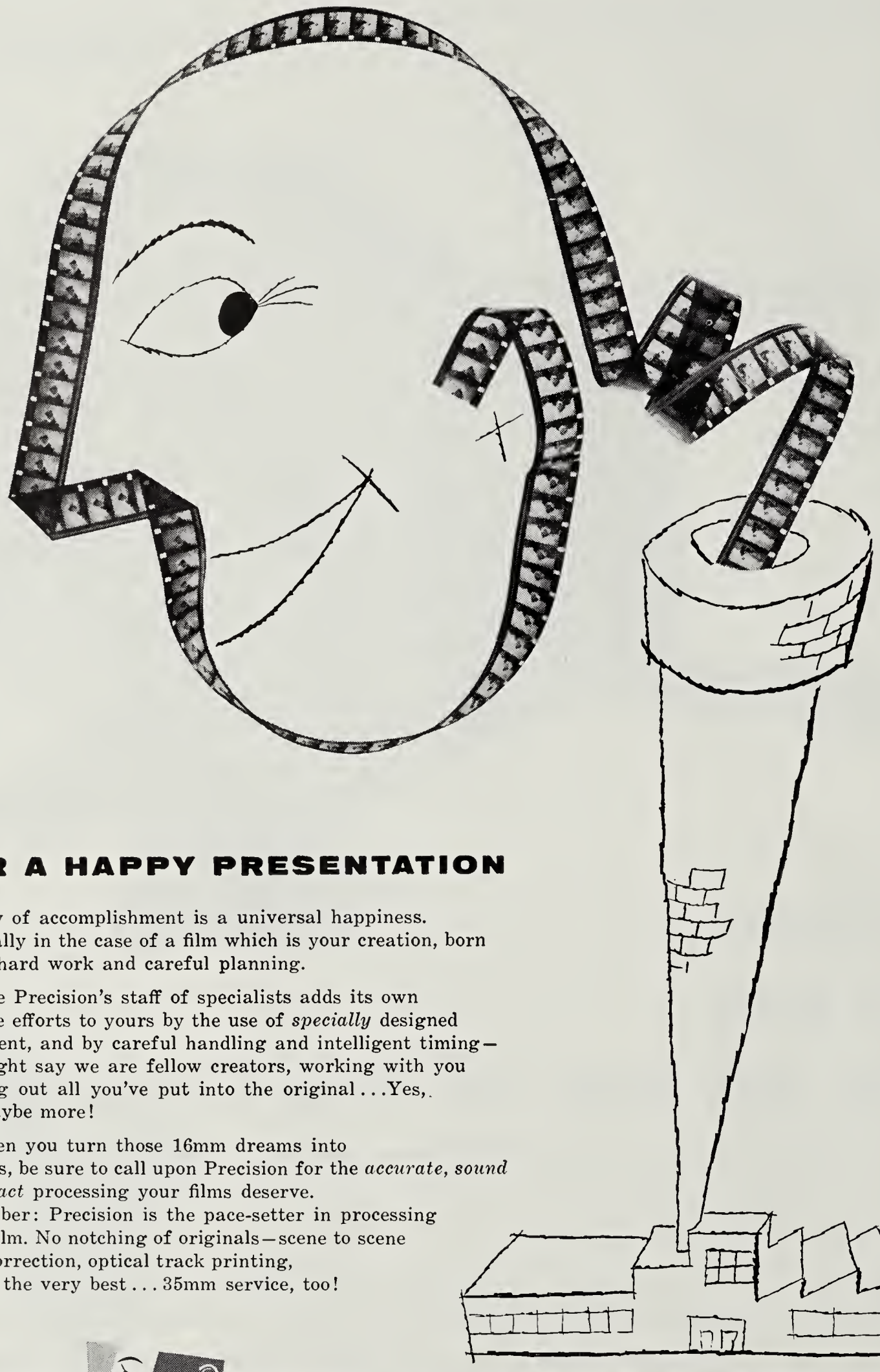
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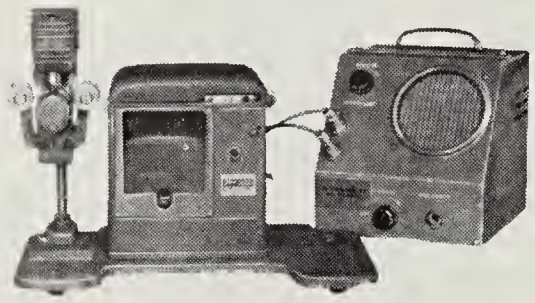
The consolidation of all our component branches under one roof marks an important milestone in our 19-year history. Now general offices, showrooms, sales and rental departments, repair department, sound and editing equipment departments, lighting department, engineering research and factory are integrated in a location that is the very heart of New York's famed film district . We hope you will visit us soon and allow us to show you a new concept in sales, rental and repair service.

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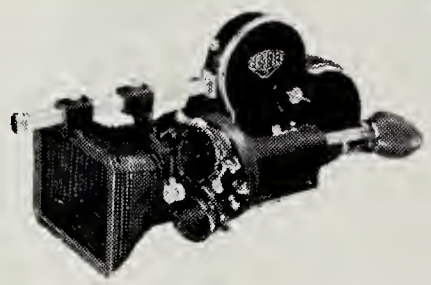
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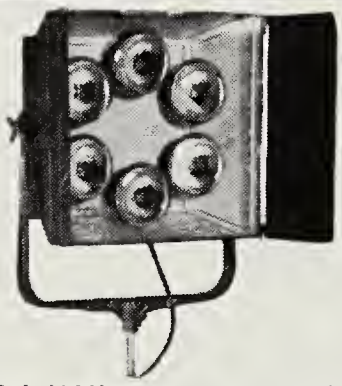
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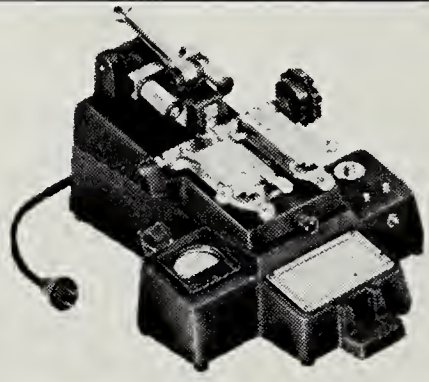
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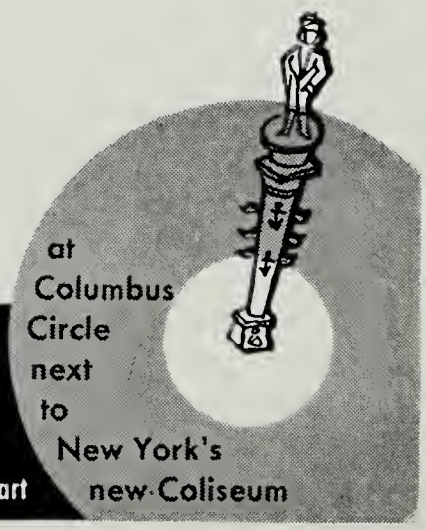


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Ten Years With Ansco

From 1949 through 1955, Misener was Manager of Professional Motion Picture Services for Ansco Division of General Aniline & Dye Company at Binghamton, N. Y. Four previous years in charge of Ansco's Hollywood technical staff.

Won Academy Award

Misener helped introduce Ansco color, won Academy of Motion Picture Arts and Sciences Award for his contribution to design of color print scene-tester, now widely used in the industry.

Wartime Sound Specialist

During World War II, Major Misener was in charge of sound recording at Signal Corps Photographic Center. He is now a Lieutenant Colonel in the Army Reserves. Before the war, he was a Sound Engineer with Warner Brothers and for five years a physicist with Eastman Kodak Research Laboratories.

Schools and Societies

Misener is a Michigan graduate in Engineering Physics, did post-graduate work in Optics and Television Engineering at Michigan and Rochester University Institute of Optics. Now Fellow and Governor of the Society of Motion Picture and Television Engineers and member Optical Society of America, Photographic Society of America, Academy of Televison Arts and Sciences, American Society of Cinematographers, Armed Forces Communications Association, and Tau Beta Pi, honorary engineering society.

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Photographing "The Friendly Persuasion"

Dutch works of art keyed the lighting and photography of this epic color production of civil war days.

By ELLSWORTH FREDRICKS, A.S.C.

SHARP, DEEP FOCUS in all scenes.

That was William Wyler's No. 1 specification for the photography of "The Friendly Persuasion." And I considered it a nominal request—unitl I saw the sets! The real challenge in this assignment was the interiors. Dark, somber. and most with low ceilings and windows too small to admit much light. Conventional set lighting was out of the question. The solution, as I saw it, was to establish a pattern of stylized lighting for this color production, resorting to low-contrast illumination throughout for all interiors.

Before actual shooting began, a fortunate thing occurred. I accompanied Wyler on a location-scouting trip, which took us through Kentucky. Virginia. and to Washington. D.C. It was while in the latter city that Wyler and I chanced to visit the Mellon art gallery and in the special gallery devoted to the works of old Dutch masters, we found the answer to our interior photographic problems. There on one canvas after another were color patterns and lighting patterns ideally suited to the pictorial treatment of "The Friendly Persuasion"—a story of civil war times starring Gary Cooper and Dorothy Maguire.

When we started shooting, following our return to Hollywood, those Dutch paintings became the key to our pictorial treatment of all interiors. And to achieve this we called up all the resources of our many years' of experience as a photographer. not to mention all the craftsmanship and skill of



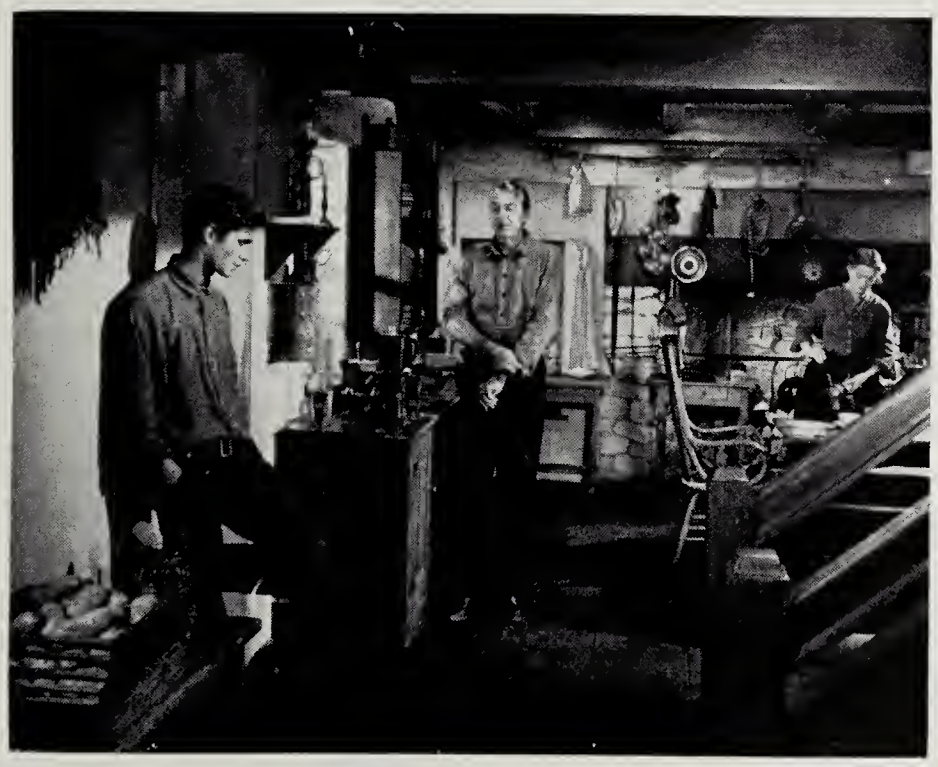
HERE TWO CAMERAS are focused and ready to shoot on an exterior for Allied Artists' "The Friendly Persuasion," as director of photography Ellsworth Fredricks, ASC, center, takes a light reading. Story deals with Quaker family life in Civil War days.



ONE OF two bedroom sets, deep, with low, slanting ceilings and no place for set lamps except on the floor. Here, light was "bounced" from wall to wall and sometimes re-directed by concealed mirrors.



ANOTHER LOW-CEILINGED interior which precluded use of overhead lighting units and made side and cross lighting bear the brunt of the set illumination.



EXCEPT for small spots concealed behind the heavy ceiling beams, all lighting here is from the floor. Note how lighting in planes enhances depth of the scene.



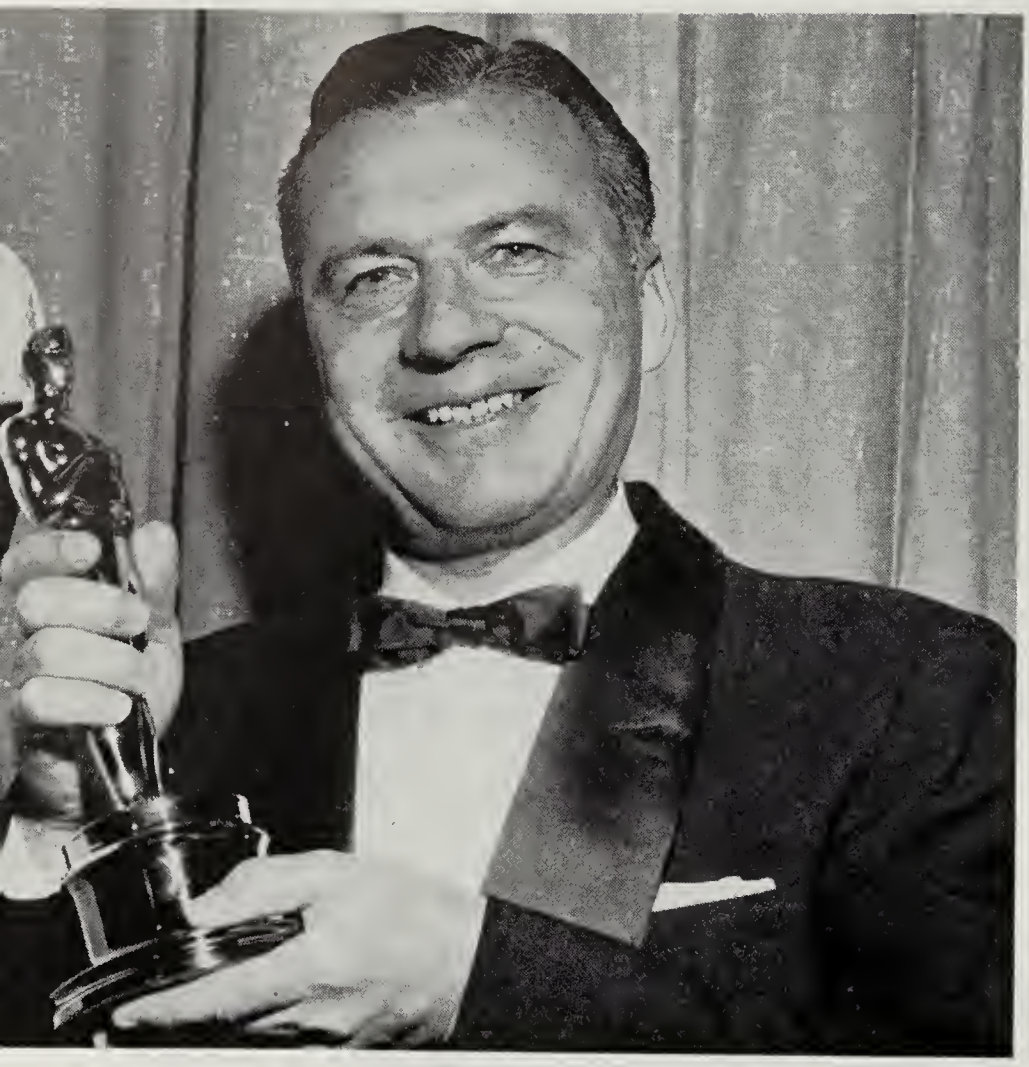
POSITION of actors as well as the pattern of action in above and other scenes shown here indicate why sharp, deep focus was so essential in the photography.

our gaffer and crew. Our chief problem was simply—How to get adequate light into the sets without making it look unnatural or ridiculous. You see, most of the interiors had ceilings which were an essential part of every composition; so there wasn't the usual convenience of employing lights from overhead. Lighting had all to be done from the floor. And we often had to "bounce" light in through windows, against walls—and in one instance I even employed mirrors concealed on the set to re-direct light from key set lighting

For the most part I used Brutes fitted with special diffusers on all interiors. These were large 4′ by 4′ squares of white Chinese silk mounted on substantial frames. They effected a fine, diffused quality in the light and at the same time had only a little effect on light transmission. Thus we were able to hold down the light intensity on the Brutes, yet retain a soft, flat quality in the illumination that cut the sharp peaks from the highlights. This also had the unique effect of increasing our film speed. Normally, every time we add a highlight—on the hair, shoulders, etc.—it has a direct effect on the film processing and particularly in the printing because the highlights are what the laboratories print for. By holding down on the highlights more detail in the shadow areas comes through with the result that the overall scene benefits when low-contrast illumination is used for color photography.

To elaborate on this—if the lab disregards the highlights and prints for the faces and shadow detail, the highlights will be out of balance for normal, middle-of-the-scale printing. Therefore, in our effort to get another full stop in film speed we had to avoid sharp highlights entirely. For one thing, with the lighting pattern we had established for this picture, an abundance of highlight simply did not

(Continued on Page 250)



FIRST OSCAR for Bob Burks! Often a nominee for his excellent camera work, Oscar he holds is his first award for achievement in cinematography. Academy voted his color photography of "To Catch a Thief," best for 1955.

AFTER TEN YEARS without a nomination, James Wong Howe finally hit the jackpot, winning an Oscar for best black-and-white photography for 1955, for "The Rose Tattoo." He also won the 1955 Look Award for photography of the same picture.



1955 Academ

Oscars won by Robert Bu best color photography, "The Rose Tattoo,"

ROBERT BURKS, A.S.C., and James Wong Howe, A.S.C., both Oscar winners for the first time, carried off the Academy Awards for best achievement in cinematography for 1955 at the Academy's presentation ceremonies in Hollywood last month.

Burks was awarded the coveted Oscar for his color photography of "To Catch A Thief," produced and directed by Raymond Hitchcock for Paramount Pictures Corp. Howe received the award for "The Rose Tattoo," voted best achievement in black-and-white photography for the year 1955. "Tattoo" is also a Paramount production and the award marks the first time that this studio's pictures have garnered both color and black-and-white photographic awards in one year.

Robert Burks' award is richly deserved and is unquestionably popular with his felllow directors of photography whose voting in the preliminary balloting made the production a candidate for the color cinematography award. Earlier, in 1953, "Stranger on a Train," which he photographed, was also a nominee.

Since Burke began photographing exclusively for Alfred Hitchcock, his camera work has taken on a markedly superior luster, as evidenced by the fact that three of his Hitchcock pictures have received nominations for photography. In "To Catch a Thief," Burks has excelled his earlier accomplishments and the production throughout shows a mastery of lighting and camera handling not found in many productions in these days of high budgets and tight time schedules.

Burk's photography is of the school of light and shade, of fine gradations, rather than that of the practitioners of painting with colored light, and he has achieved a new high in his art with the skillful lighting of the many fine interiors of "To Catch a Thief."

Not since "King's Row" was nominated for best achievement in photography in 1943 has James Wong Howe been anywhere near the winner's circle at Academy Awards time. Now, after a wait of more than ten years, fortune has smiled on him with his first Oscar award. Few who have seen his outstanding work on the screen—"The Rose Tattoo"—will dispute the Academy's choice in naming this production for the best black-and-white photography for 1955. In these days when color productions predominate, it takes superior camera artistry to achieve an outstanding and praiseworthy job of photography in black-and-white. In "Tattoo," Howe demonstrates perfection in not merely one aspect of cinematography, but in every one of the many

Award Winners

.S.C., for "To Catch a Thief,"
ames Wong Howe, AS.C., for
lack-and-white photography.

phases which go to make up a well-photographed production. His skillfully lighted interiors especially demonstrate a mastery of photographic technique and a technical and artistic consistency which has always marked his work. It simply had to pay off sooner or later with an Oscar!

In all, ten major film productions of 1955 were nominated for cinematography achievement awards by the Academy. The eight directors of photography who had nominated pictures in the running have each received a Nomination Certificate from the Academy. which in itself is considered something more than a consolation award. These cinematographers and their nominated pictures are:

Arthur E. Arling. A.S.C.. "I'll Cry Tomorrow." (B&W).

Russell Harlan. A.S.C.. "The Blackboard Jungle." (B&W).

Charles Lang. A.S.C.. "Queen Bee." (B&W).

Joseph LaShelle. A.S.C.. "Marty." (B&W).

Harold Lipstein. A.S.C.. "A Man Called Peter," (Color).

Leon Shamroy, A.S.C.. "Love is a Many Splendored Thing," (Color).

Harry Stradling, A.S.C.. "Guys and Dolls." (Color).

Robert Surtees, A.S.C.. "Oklahoma!" (Color).

Five other A.S.C. members figured directly or indirectly in the awards for special effects or technical and scientific accomplishments.

John Fulton, A.S.C., received an Oscar for Best Special Photographic Effects in the Perlberg - Seaton - Paramount production. "The Bridges of Toko-Ri." The trophy will join two others previously earned by Fulton for achievement in special photographic effects.

National Carbon Company was cited by the Academy with a Class I Technical Award (Oscar) for the development and production of high-efficiency yellow flame carbons for motion picture photography. The award was accepted in Hollywood by Charles Handley, A.S.C.

Eastman Kodak Company was honored with a Class II Award (plaque) for its achievement in developing the Eastman Tri-X

(Continued on Next Page)



JOHN FULTON, A.S.C., who has previously won two Oscars for achievement in special photographic effects, added another to his collection this year for outstanding photographic effects for Paramount's "The Bridges of Toko-Ri."



CHARLES HANDLEY, A.S.C., accepted Oscar awarded the National Carbon Company for development of yellow flame carbon for motion picture color photography.



EASTMAN KODAK COMPANY was presented a Class II Technical Award for the development of Tri-X panchromatic negative film, which was accepted by Emery Huse, A.S.C. (left). A similar award was made to Farciot Edouart, A.S.C. (right), Hal Corl, and Paramount Transparency Department, for development of double-frame, triple-head background projector. Actress Claire Trevor made the trophy presentations.



LOOK AWARD

JAMES WONG HOWE, A.S.C., last month, was honored with the Look Achievement Award for cinematography of two pictures: the black-and-white production, "Rose Tattoo," and "Picnic," which he photographed in color. It marked the first time that Look Magazine had cited a cinematographer for two separate photographic achievements in a single awards presentation. Actress Kim Novak, who starred in "Picnic," presented Look's award to Howe in ceremonies telecast coast to coast by CBS-TV.

WILLIAM SICKNER, A.S.C., was honored with the single Emmy Award bestowed this year by the Academy of Television Arts and Sciences for best achievement in cinematography of a television film production. Excellence of photography of "Black Friday," a film in the "Medic" series, won him the award. A director of photography since 1915, Sickner moved from feature films to TV film photography in 1954 when he was signed to photograph "The Whistler" series. Last year he was made director of photography on the "Medic" series.



EMMY AWARD

Panchromatic Film. The award was accepted for the company in Hollywood by Emery Huse, A.S.C.

Farciot Edouart, A.S.C., along with Hal Corl representing the Paramount Studio Transparency Department were awarded a Class II plaque for engineering and developing a double-frame, triple-head background projector. The pair were called to the stage a second time the same evening to receive a Class III Honorable Mention award for the development of an improved dual stereoptican background projector.

Another Paramount notable, Loren L. Ryder, A.S.C., along with Charles West and Henry Fraker, were also honored with a Class III Honorable Mention award for their achievement in developing a Projection Film Index to establish proper framing for various aspect ratios.

Other major awards presented by the Academy last month are:

Best picture: "Marty" (Hecht-Lancaster, United Artists).

Best actor: Ernest Borgnine for "Marty" (Hecht-Lancaster, UA).

Best actress: Anna Magnani for "The Rose Tattoo" (Hal Wallis-Paramount).

Best actress in supporting role: Jo Van Fleet for "East of Eden" (Warner Bros.).

Best actor in supporting role: Jack Lemmon for "Mr. Roberts" (Orange Productions, Warner Bros.).

Best Director: Delbert Mann for "Marty" (Hecht-Lancaster, Paramount).

Best documentary feature: Helen Keller in "Her Story," produced by Nancy Hamilton.

Best documentary short: "Men Against the Arctic" (Walt Disney).

Best one reel short: "Survival City," produced by Edmund Reek (20th Century-Fox).

Best two-reel short: "The Face of Lincoln," University of Southern California, Wilbur T. Blume, producer.

Best screenplay: (Regardless of whether developed from published material or unpublished story) Paddy Chayefsky for "Marty" (Hecht-Lancaster, UA).

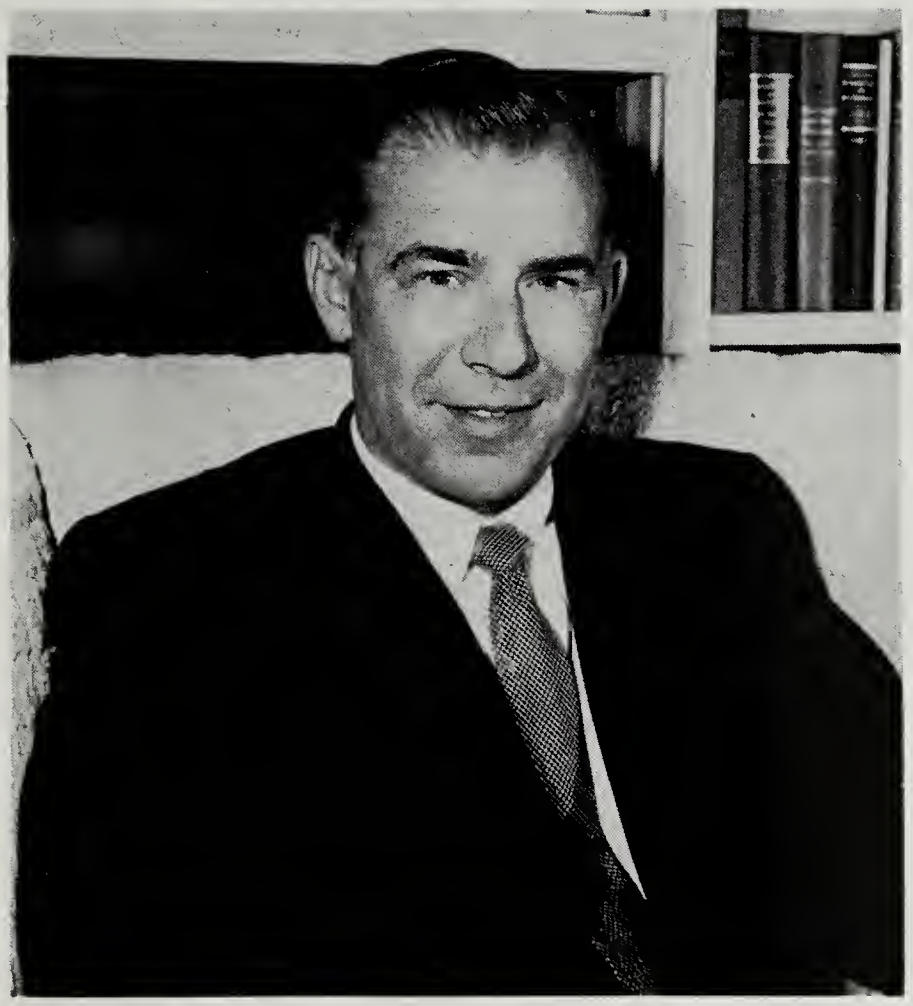
Best story: (Covering only original, unpublished stories written for the screen) Donald Fuchs for "Love Me or Leave Me" (MGM).

Best Screenplay: (For writers who have developed own original stories into screenplay) (Sonya Levein and William Ludwig for "Interrupted Melody" (MGM).

Best cartoon: "Speedy Gonzales," by Edward Selzer (Warner Bros.).

Best Song: "Love is a Many Splendored Thing" from picture of that name written by Sammy Fain and Paul Francis Webster (20th Century-Fox).

(Continued on Page 264)



GEORGE SEATON, president of the Academy of Motion Picture Arts and Sciences, Hollywood. His first Academy Awards Presentation is lauded as the most successful yet.

What Is The Academy?

There's more to the Academy of Motion Picture Arts & Sciences than the annual Oscar awards. One of the oldest organizations serving the industry, its operations benefit many.

BEHIND THE facade of the Academy Award statuette known as Oscar is a great story — a story of the most renowned organization associated with the motion picture industry, the Academy of Motion Picture Arts and Sciences.

Annually in March, the Academy's functions and its Awards presentations come into sharp focus, command international attention. Yet, outside the industry little is known concerning the Academy's many other activities. The annual Oscar awards continue to grow in national and international importance and people the world over are learning of the Academy's cultural interests, its select membership, and its established prestige which contribute to the maintenance of a dignified educational forum not found in any other organization in Hollywood.

The Academy was founded in May, 1927, in Hollywood with thirty-six charter members, which included production executives and cinema luminaries of the time. Douglas Fairbanks, Sr., was elected the first president. Chief aim of the organization was the determination to raise the standards of motion picture productions educationally, culturally and scientifically. To give impetus to this determination, the Academy Awards were established to encourage greater achievement among those responsible for the production of motion pictures. It was a most significant step. Today, no one will deny the importance of the Awards as incentive for producers, writers, directors, actors, cameramen and other technicians to strive for the ultimate in their respective fields.

In the years since its inception this non-subsidized but wholly integrated organ of the motion picture industry has grown to embrace the fourteen principal branches of film making. Through these branches 1,710 active motion picture members have been gathered from the actors, art directors, cinematographers, directors, executives, film editors, music, production, public relations, sound, short subjects and writers' fields. Other branches are associates and members-at-large. Eligibility is based on the individual's merits as a recognized craftsman in the branch in which he is engaged.

While the annual Awards presentation is the most famous of Academy activities, the Academy serves the motion picture

(Continued on Page 252)



EXECUTIVE DIRECTOR of the Academy, Margaret Herrick, and assistant Sam E. Brown. Under their able management the Academy over the years has become one of the most valuable assets of the Motion Picture Industry.



ON LOCATION in New Guinea for the French-Australian production, "Walk Into Paradise." Using a Mitchell 35mm camera, director of photography Carl Kayser (seated) and his camera crew prepare to shoot scenes of a hazardous river crossing sequence. Standing at Kayser's left is director Lee Robinson. Two versions of story were filmed—one in English and one French.

Assignment In New Guinea

"Walk Into Paradise" filmed in untamed wilderness of the South Pacific. More than 12,000 colored natives participated, both as extras and members of the production crew.

By CARL KAYSER

DESPITE THE FACT that Australia is credited with having produced the first full-length feature film—"The Kelly Gang," made in 1905—the film industry of this vast country that is nearly as large as the U.S.A. but with a population of only 9,000,000 people is still in its infancy.

In the last 50 years, less than 250 films have been made and the industry has only been kept in existence by an occasional film. In recent years, 20th Century-Fox made "Kangaroo," Ealing Studios of London completed a short production program and, quite recently, American independents Joe Kaufman and Byron Haskin made "Long John Silver" here.

This absence of continuity of production, coupled with the great lack of financial support from the public and the Government, has made activity in the Australian film industry a spasmodic affair. However, a few years ago, the first decisive steps to establish a concrete production plan were undertaken by a new company, Southern International Films, which was formed by well-known actor-producer, Chips Rafferty and director Lee Robinson.

Deciding that the major asset of the country was the unique locations of the South Pacific area, the company concentrated on feature stories set against colorful authentic backgrounds.

Their first film, "The Phantom Stockman" was made in the desolate regions of Central Australia. Their second, "King of the Coral Sea," was produced in the pearling regions of Thursday Island and the Torres Straits.

With their third venture came a production tie-up which further increased their activities. Paul Edmond Decharme, the well-known French Producer, joined with them in a long-range plan to produce French and English films in the South Pacific.

The first production under this joint harnessing of French and Australian actors, technicians and equipment was "Walk Into Paradise," an adventure story set in the wilds of New Guinea where no feature film had ever previously been attempted.

The film, shot in Eastman Color for the wide screen, stars Australians Chips Rafferty and Reg Lye together with French romantic leads Francoise Christophe and Pierre Cressoy.

The French crew consisted of a French dialogue director and a makeup artist; the rest of the technicians were Australian. Processing, editing, musical score and re-recording was to be done in France.

The story, based on actual events taken from the records of the Administrataion files, tells of a hazardous patrol comprising patrol office, French woman doctor, prospector and crocodile hunter.

To insure authenticity, the film was shot in the actual locations among the wilderness and savage tribes of the interior of New Guinea.

Because of the remoteness of the majority of locations, which were in areas completely devoid of roads, crew and equipment had to be flown in by DC3 and smaller aircraft, which in many instances used tiny and remote airstrips left over from the last war. Supplies and equipment were also delivered by special parachute airdrops.

For the first location in the Eastern Highlands, a special village was built by the natives for the unit, and this camp affectionately referred to as "Hollywood" by local inhabitants, was an object of much admiration by the townspeople

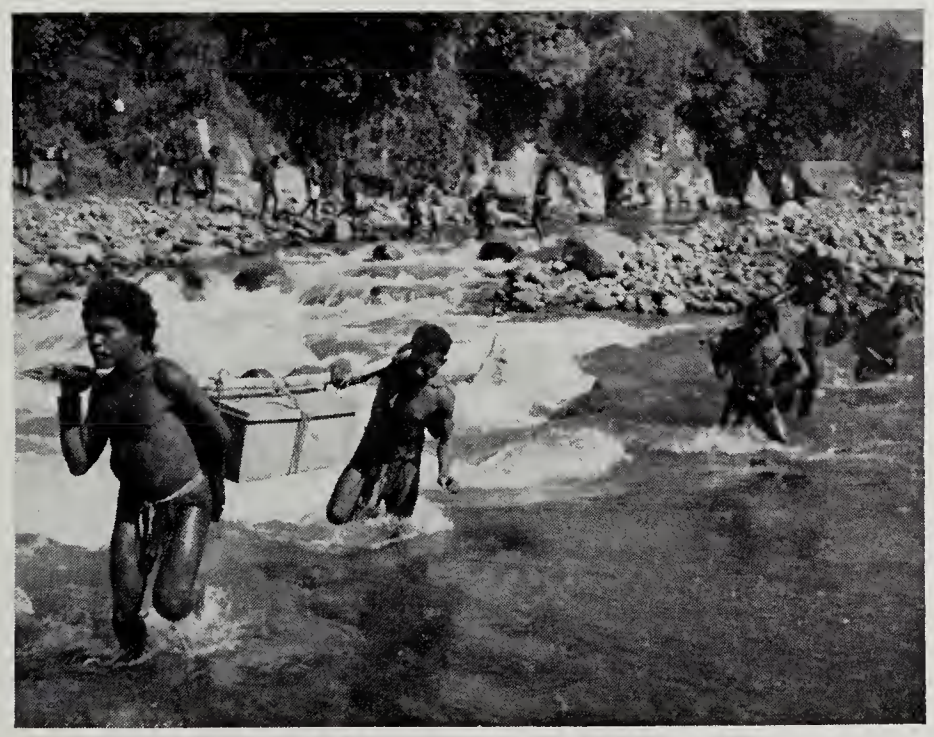
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HAZARDOUS SHOOTING in one of the tiny barrats or canals which form the tributaries of the mighty Sepik river in New Guinea. The forty-foot dugout canoes are paddled by native women who manipulate them skillfully through the crocodile-infested waters.



WITH THE Mitchell camera mounted on a high parallel, the camera crew prepares to shoot scenes for the spectacuar airstrip sequence for "Walk Into Paradise," in which more than 12,000 gayly decorated natives flatten the 12-foot high kunai grass.



CAMERAS, FILM, and other photographic and grip equipment were transported by native carriers recruited from the Bena tribe of the Eastern Highlands of New Guinea. Here they carry some of the equipment across a treacherous tributary of the Sepik river.



DIRECTOR Lee Robinson and cameraman Carl Kayser, with the camera mounted on a quickly improvised raft, make an effective traveling shot of a casualty being transporetd down river in a native laktois or dugout canoe.—Photos by Alton L. Fraser, Sydney, NSW.


Comin'



for to carry you away...

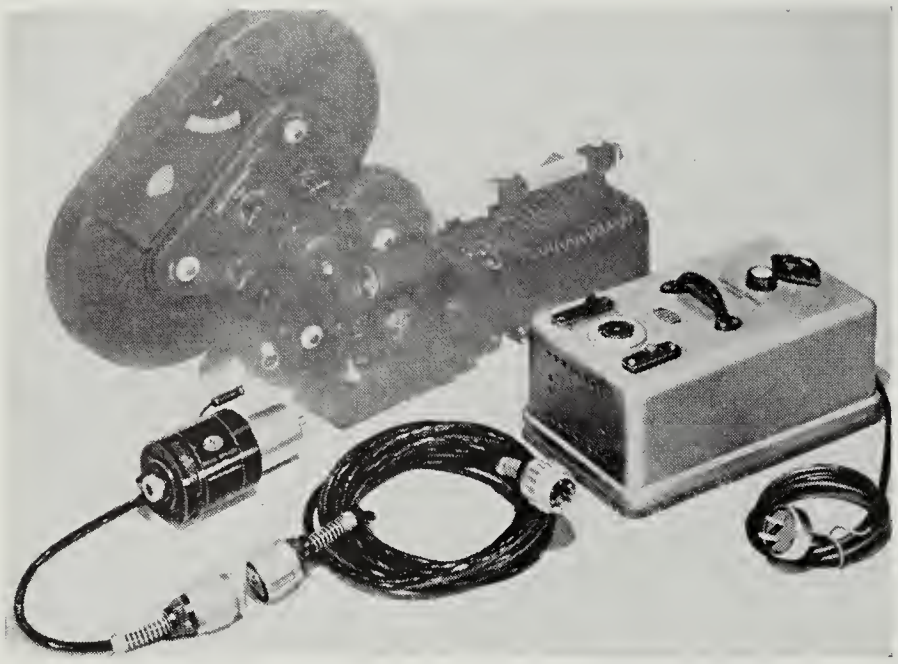
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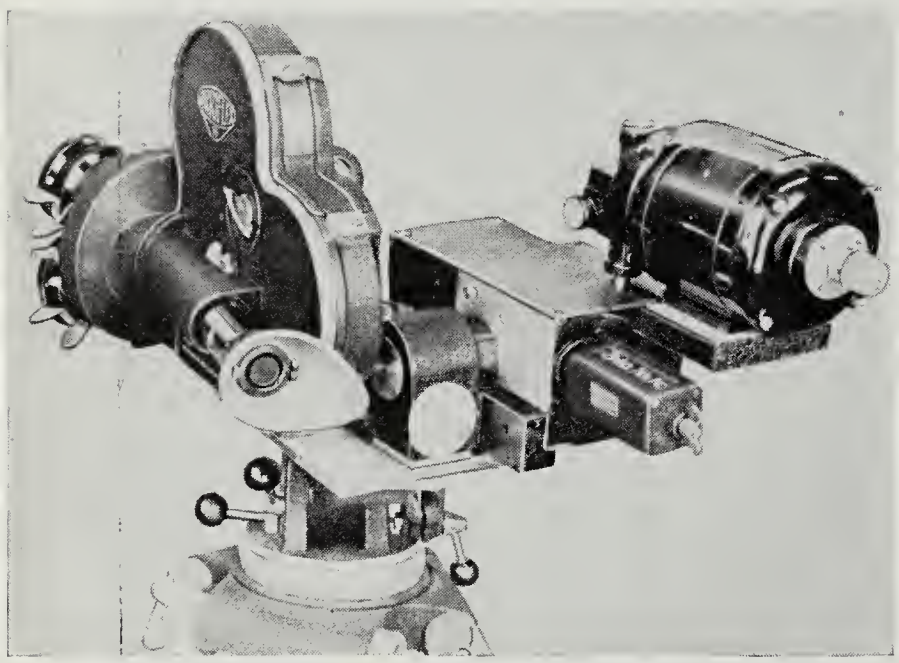
West Coast Division
6706 Santa Monica Blvd., Hollywood 38, Calif.



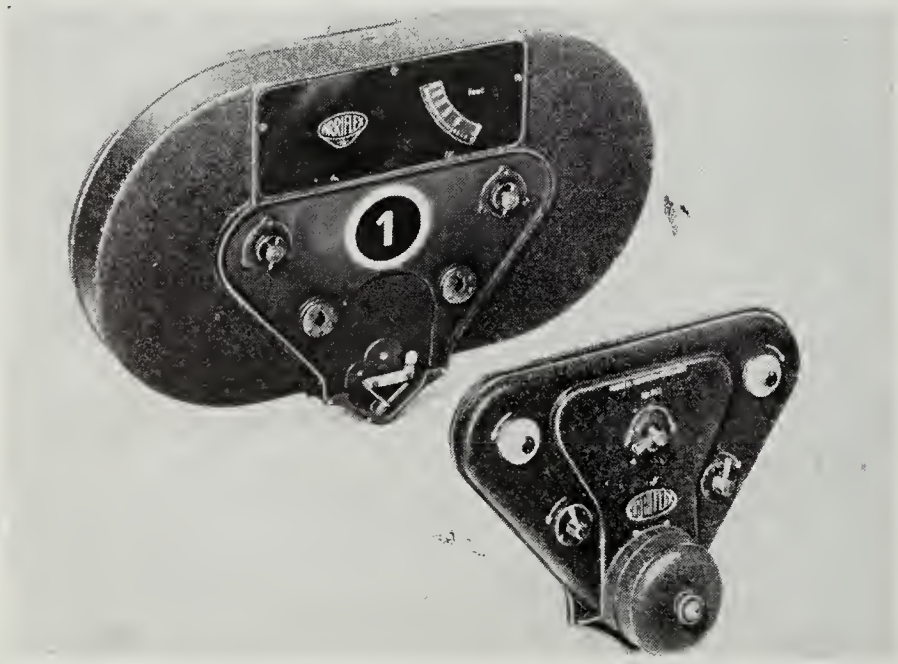
THE SYNCHRONOUS motor, shown here detached from camera, is furnished with its own 110-volt, 60-cycle AC power supply.

New Accessories Extend Range Of 16mm Arriflex

New 400-foot magazine, synchronous motor, and animation motor open new fields of operation for this versatile portable 16mm camera.



ANIMATION MOTOR features ¼-second exposure for either single-frame or continuous shooting at 60 f.p.m.



400-FOOT film magazine for Arriflex 16, shown here with torque booster motor (lower, right) detached.

VERSATILITY of the 16mm Arriflex camera has been broadened by three new accessories certain to find interest among owners of this camera who use it for either studio or location production. Last month, Kling Photo Corp., exclusive importers of Arriflex cameras, introduced a new 400-foot film magazine, a synchronous motor, and an animation motor for the 16mm Arriflex.

The magazine is primarily designed for 400-ft. 16mm single or double perforated film on plastic cores (darkroom loads), but by removing the core adapters it will also accept 200-ft. of film on daylight loading spools and a corresponding 200-ft. take-up spool.

The magazine is of the single compartment displacement type in order to make it as light and compact as possible. By using the Arri shoulder-pod, the Arriflex 16 can still be hand held with the larger 400-ft. magazine attached.

There is no need to connect belts, adjust friction or worry about clutches with the Arriflex 16 magazine. An auxiliary take-up motor attaches to the magazine, and when the complete unit is placed on the camera, it is automatically connected to its electrical system and is controlled by the camera switch. Only one auxiliary take-up motor is needed for each camera, irrespective of the number of magazines acquired.

The detachable torque motor drives the take-up through a gear transmission with the correct tension regardless of the amount of film on the take-up spindle. The motor operates on 6-8 volts DC, and obtains its energy from the power supply used to operate the camera. It is equipped with a forward-reverse switch, corresponding to the forward-reverse feature of the Arriflex camera. Each magazine has a footage counter, and is numbered for easy identification.

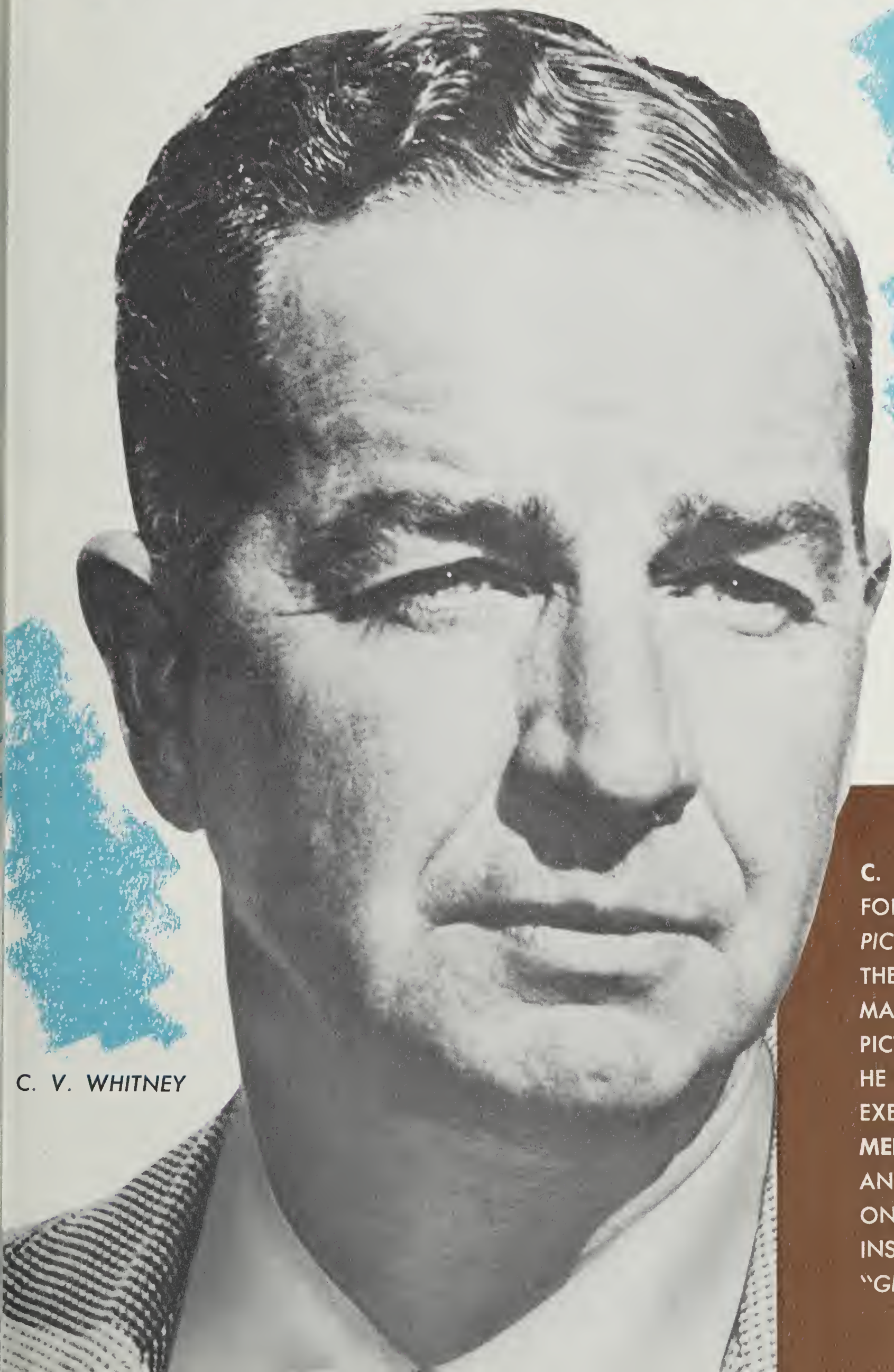
The synchronous motor for driving the camera is easily interchangeable with the variable speed motor, supplied as standard equipment with the Arriflex. Unusally light and compact, the synchronous motor can be used on the camera for hand-held shooting.

The motor is furnished with its own 110-volt, 60 cycle AC power supply. Output to the camera motor is 42 volts, 60 cycles AC and to the torque motor on the magazine (when used) 8 volts DC.

The animation motor features ¼ second exposures for either single frame or continuous shooting at 60 frames per minute. A built-on frame counter registers up to 4 digits. The Animation motor can be used manually, with a foot switch, relay, or an intervalometer. The unit operates on

(Continued on Page 255)

A new motion picture company



C. V. WHITNEY

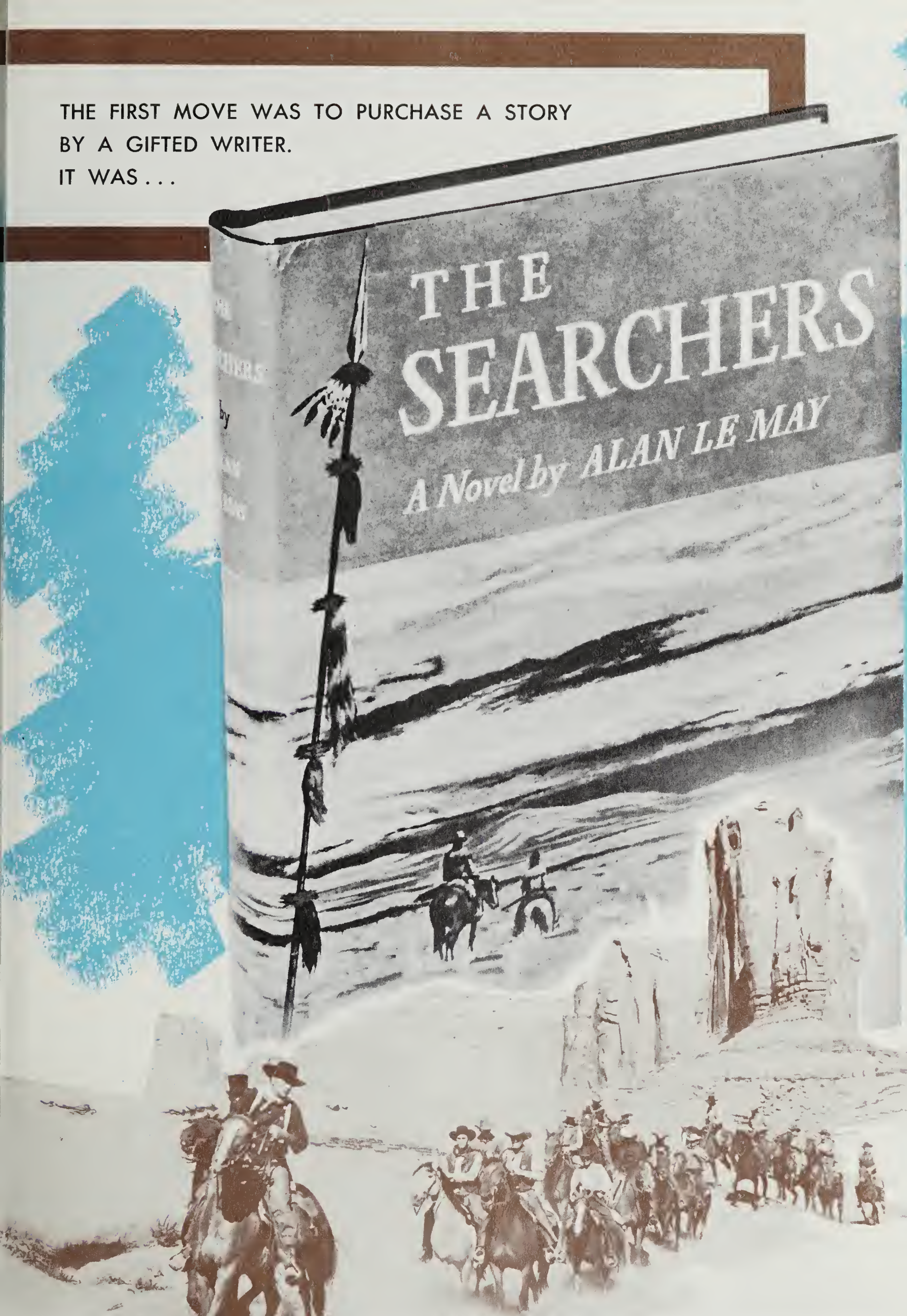
C. V. WHITNEY
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HE CHOSE AS HIS EXECUTIVE PRODUCER, **MERIAN C. COOPER,** AND GAVE HIM ONE BASIC INSTRUCTION:
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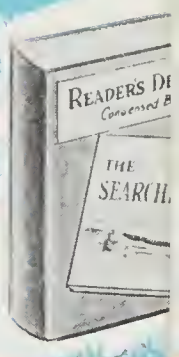


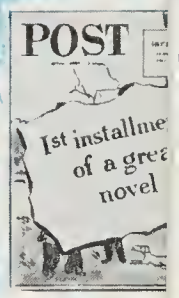
THE FOLLOWING PAGES TELL THE BOOK AND THE PEOPLE, **MERIAN C. COOPER,** *ACADEMY AWARD WINNER* "FOR HIS MANY INNOVATIONS AND CONTRIBUTIONS TO THE ART OF MOTION PICTURES," ASSEMBLED WITH MR. WHITNEY FOR THE FIRST C. V. WHITNEY PICTURES, INC. PRODUCTION.

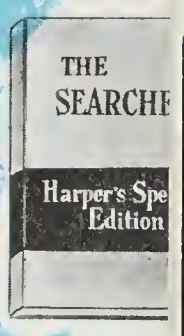
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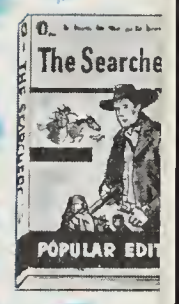
THE FIRST MOVE WAS TO PURCHASE A STORY
BY A GIFTED WRITER.
IT WAS . . .









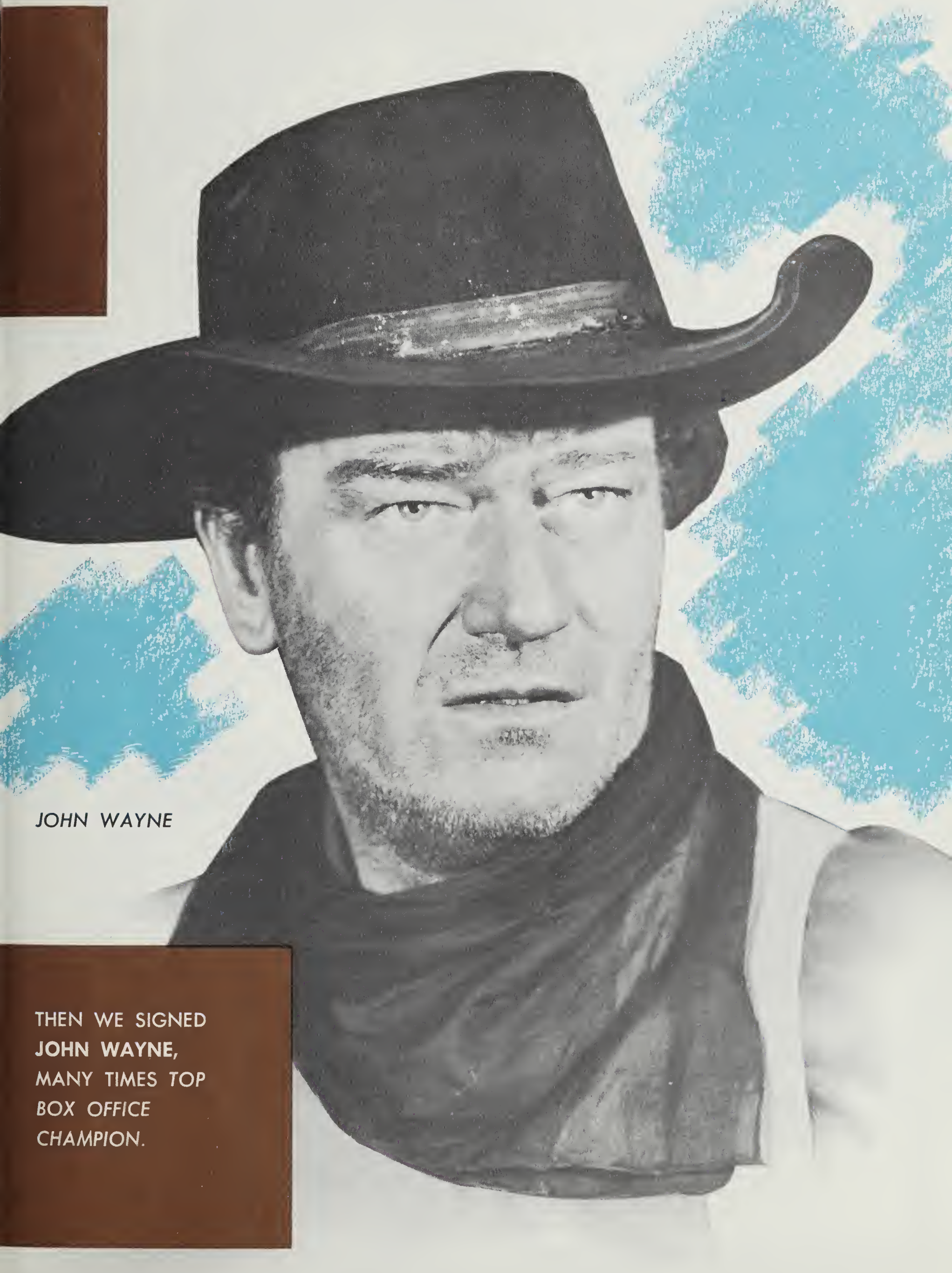


WE ENGAGED **FRANK NUGENT,** *TWICE SCREEN WRITERS GUILD AWARD WINNER* FOR "THE QUIET MAN" AND "MR. ROBERTS" TO WRITE THE SCREENPLAY. NUGENT HAD GREAT SUCCESS WITH JOHN FORD AND MERIAN COOPER IN WRITING FOR THEM "FORT APACHE" AND "SHE WORE A YELLOW RIBBOI AS WELL AS "THE QUIET MAN."

WHITNEY
AND COOPER SIGNED
THE ONLY *FOUR-TIME*
ACADEMY AWARD WINNING
DIRECTOR, **JOHN FORD,**
TO DIRECT
"THE SEARCHERS."



JOHN FORD



JOHN WAYNE

THEN WE SIGNED
JOHN WAYNE,
MANY TIMES TOP
BOX OFFICE
CHAMPION.

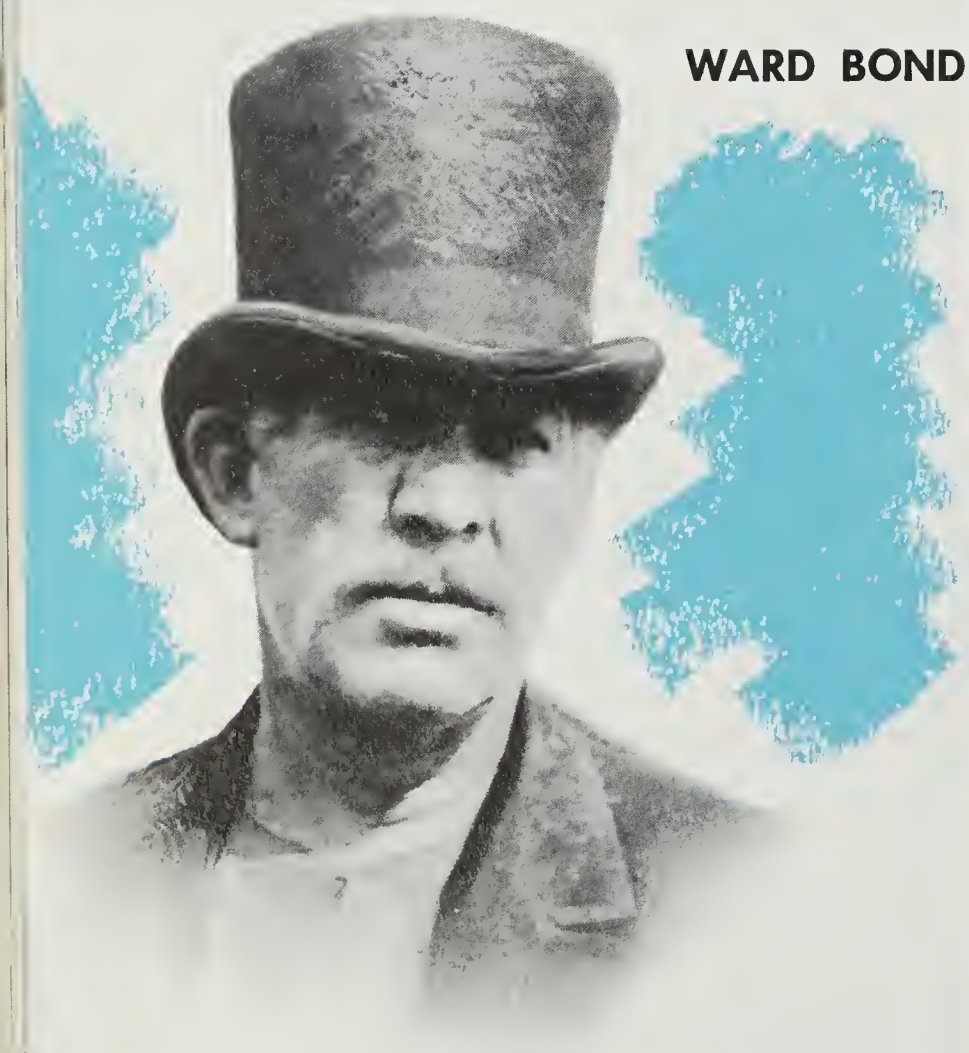
THE CO-STARRING CAST WAS SIGNED NEXT . . .



JEFFREY HUNTER



VERA MILES



WARD BOND

NATALIE WOOD

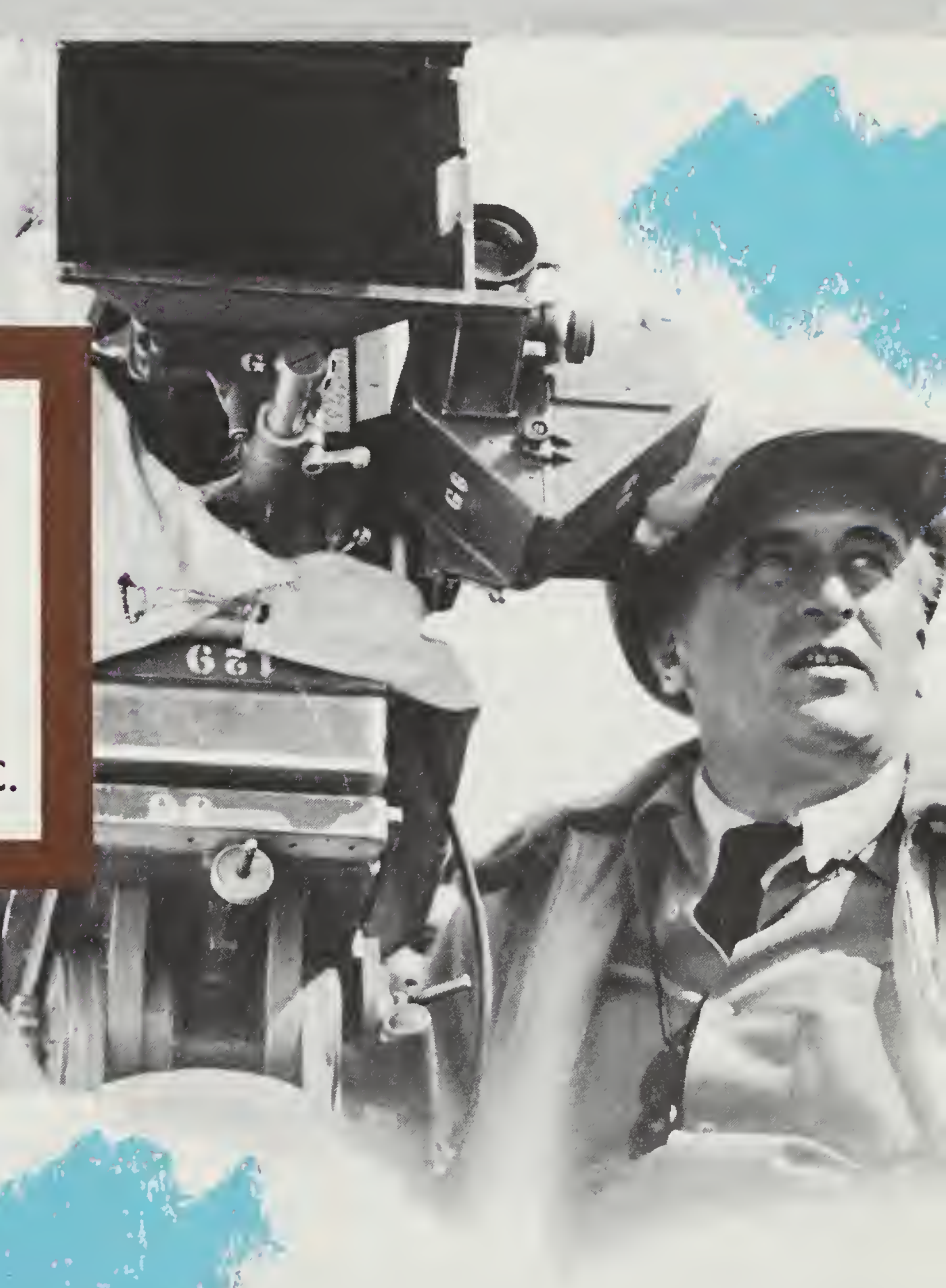


With John Qualen, Olive Carey, Henry Brandon, Ken Curtis, Harry Carey, Jr., Antonio Moreno, Hank Worden, Lana Wood, Walter Coy, Dorothy Jordan, Pippa Scott, Pat Wayne, Beulah Archuletta.



PATRICK FORD, WIDELY EXPERIENCED IN MAKING MOTION PICTURES IN FAR PLACES OF THE WORLD, AS WELL AS HOLLYWOOD, WE ASSIGNED AS ASSOCIATE PRODUCER.

WINTON HOCH, *THREE-TIME ACADEMY AWARD WINNER* FOR CINEMATOGRAPHY, TO PHOTOGRAPH "THE SEARCHERS" FOR C. V. WHITNEY PICTURES, INC.





FOR THE MUSIC WE ENGAGED **MAX STEINER,** *THREE-TIME ACADEMY AWARD WINNER, 27 TIMES NOMINATED* . . . and to write the song, "THE SEARCHERS," Stan (*"Ghost Riders In The Sky"*) Jones.



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When **MR. JACK L. WARNER** saw "THE SEARCHERS"
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OFFICE OF VICE PRESIDENT

March 6, 1956

Dear C. V.:

You and Merian Cooper are to be congratulated.

THE SEARCHERS is one of the best pictures I have ever seen. Also, extend my thanks to John Ford, John Wayne and all the rest of the members of your outstanding new organization.

Sincerely,

Jack

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TWENTY-EIGHTH ANNUAL AWARDS



Paramount

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Best
Cinematography
BLACK-AND-WHITE

"THE ROSE TATTOO"

IN

VistaVision

ROBERT BURKS, A.S.C.

Best
Cinematography
COLOR

"TO CATCH A THIEF"

IN

VistaVision

JOHN FULTON, A.S.C.

FOR
BEST SPECIAL PHOTOGRAPHIC EFFECTS
FOR
"THE BRIDGES AT TOKO-RI"

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES

TWENTY-EIGHTH ANNUAL AWARDS



W. J. German, Inc.

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EASTMAN KODAK COMPANY

Winner Scientific and Technical Award

for

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EASTMAN TRI-X NEGATIVE FILM

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES



Our Warmest Congratulations

TO THE WINNERS

of

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for

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TECHNICOLOR MOTION PICTURE CORPORATION

HERBERT T. KALMUS, President and General Manager

TWENTY-EIGHTH ANNUAL AWARDS

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Congratulate

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for

ACHIEVEMENT IN CINEMATOGRAPHY

ROBERT BURKS, A.S.C.

Who Photographed "To Catch a Thief"

and

JAMES WONG HOWE, A.S.C.

Who Photographed "The Rose Tattoo"

and

Salute The

DIRECTORS OF PHOTOGRAPHY

Who Also Were

NOMINATED

for

CINEMATOGRAPHY AWARDS

ARTHUR E. ARLING, A.S.C.
"I'll Cry Tomorrow"

RUSSELL HARLAN, A.S.C.
"Blackboard Jungle"

CHARLES LANG, A.S.C.
"Queen Bee"

JOSEPH LaSHELLE, A.S.C.
"Marty"

HAROLD LIPSTEIN, A.S.C.
"A Man Called Peter"

LEON SHAMROY, A.S.C.
"Love Is A Many Splendored Thing"

HARRY STRADLING, A.S.C.
"Guys and Dolls"

ROBERT SURTEES, A.S.C.
"Oklahoma!"

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES

Our Sincere Thanks



to the

Members of the Academy and

those in the industry for the

Scientific and Technical Award

Bestowed upon us

for the

Development and Production of a High

Efficiency Yellow Flame Carbon for

Motion Picture Color Photography

NATIONAL CARBON CO.

NEW YORK, N. Y.



"THE VANISHING EL," documentary made by author about Manhattan's last elevated railway, has been televised to 152 audiences. Here he has returned to scene to shoot sequence of final demolition of the "El."—Valdis Berzins photo.

Cashing In On 16mm Filming

How one serious 16mm movie maker, who booked one of his early films on TV, went on from there to make movies for money.

By ROY CREVELING

IT WAS IN JULY 1949, over Cleveland's WNBK, that the filming efforts of this writer first went out to a TV audience. Since then, my films have been televised more than a thousand times over 95% of America's VHF stations, in addition to UHF and Canadian outlets.

"How do you break into the field?" almost every new acquaintance who owns a 16mm camera asks anxiously. To which I always feel like saying, "Love will find a way," then back down because it sounds foolish. It's not, though. Nothing could be truer. For if you don't love movie making *passionately*, you're just not going to spend the hours required to produce a film with sufficient substance to make someone who doesn't know you from Adam want to spend *his* time and *his* money promoting it for you.

I write here with the assumption that most readers, ambitious to break the professional barrier through TV, stand equipped with little more than a 16mm camera, a tripod, a few accessories, and insufficient capital to engage services of assistants. That's all right. Three-quarters of my films are "one-man productions" made with modest equipment. But, when you do almost everything yourself it's a long, long trail o' winding from the time the creative cogs in your brain start turning, to the day you sit outside a film laboratory's delivery room door awaiting the first sound print of your brain-child. Five-hundred hours, maybe. And I'm speaking of nothing more than a 13-to-14 minute short of the travel-documentary variety. If you love movie-making that much, there is an even chance some distributor might like your film enough to put it on the market.

Of course, the type of subject is the biggest factor in production time. And subjects that require the most time are not always the most rewarding, financially. One of my most-often televised pictures was completed in 48 hours. It's a wrestling short called, "Lipstick and Dynamite," featuring Mildred Burk, long-time champ of women wrestlers, and Mae Weston. I co-produced this one with Jack Pokress of New York, who knew the contenders. We shot from ringside and the balcony on fight night in Newark, exposing a mere 300 feet, since this footage was to be part of an "epic" contrasting the fight ring with the wedding ring side of a lady wrestler's life. But, appearance schedules took the girls away from this coast before we got around to doing the gentler side. There'd be a wait of several months.



SHOOTING a scene for author's 16mm documentary, "Paradise Ditch," saga of an abandoned Pennsylvania canal whose rotting barges are shown in foreground.—Fred Lewis photo.

Our distributor, Mr. Saul Turell of Sterling Films in New York, advised us to point up the footage we had and market it right away. But, I balked at having my name attached to anything as ordinary as straight TV wrestling fare. With the promise of putting out the complete version later and the fact I had made an extraordinary trick ending for the picture the night of the fight, I relented. By fading out (camera on tripod) while the referee held Mildred's winning hand in the air, and having the pair strike the same pose in the same spot, after the champ had donned her dress (I'd traced their feet on the ring canvas before they left) I was able, by winding back and fading in with camera still on tripod and unmoved, to make a dissolve that causes Mildred to become fully dressed in the ring, without putting down her hand! While thousands cheer, the commentator remarks, "Yes, indeed! It's a fast-changing world we live in. Man, move over!" Finis.

Two-hundred-and-eighty feet of the 300 feet we had shot that night were usable. A record! On another night Jack went back and made 50 feet of auidence reaction cut-aways. I spent a day juggling scenes to build up tempo and insure a smash finish. Another couple of days were spent writing nonsense for the narrator. The burlesque was made complete at the recording studio, by adding a background of classical music, topped with Listz's Second Hungarian Rhapsody. And we had a new picture in the can!

Another subject, which I started to film twenty-five years ago, has just received its sound track. (Hollywood, please note: Shooting time, twenty-five years; running time, thirteen minutes. It's a documentary about the Lehigh and Delaware canals of Pennsylvania where, after 100 years, commercial navigation ceased because the barge-towing mule couldn't keep pace with the iron horse. Those historic last days of navigation in 1931 are shown in contrast with the canal's present status as an enchanting 60-mile-long state park. Much water has gone over its dams in the years between. There were floods that wrecked parts of the canal. And there were people who wanted to fill it in for a superhighway. Litigation ensued. All part of the film I call "Paradise Ditch."

So there you have the long and short of it; the ridiculous and the sublime. But, I'd say most of my films average nearly 500 hours each to write, shoot, edit, and follow through.

They're documentaries that most any patient 16mm cameraman could shoot. However, I've livened them up by "starring" a central, dominant object in each, which "borrows" the narrator's voice to tell its side of the story.

In "The Vanishing El," a documentary I made about Manhattan's last elevated railway, one of the old cars realizing its days are numbered, reminisces while "personally" conducting the audience on a nostalgic tour over its twenty-mile route. In fact, according to the report of plays which I receive from my distributor every third month (complete with royalty check), the old El car has taken 152 separate TV audiences down its tracks since the initial run on WCBS, New York, June 26, 1950. It has played return engagements there three times since. It also played WJZ four times, and WNBT four times. Total among all New York City stations: 16 plays. A lot of credit goes to Carl King who permitted the El Car to use his engaging voice.

A Fifth Avenue double-decker bus, just before double-deckers disappeared from New York, played a similar role

(Continued on Page 262)



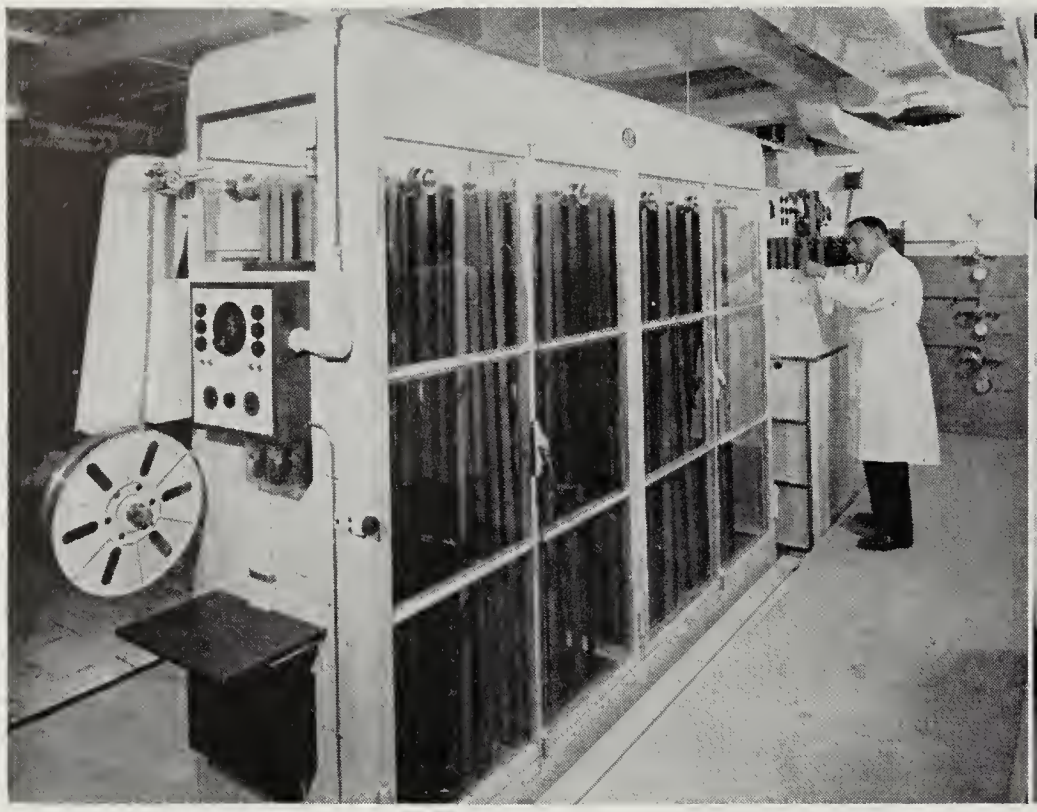
"LIPSTICK AND DYNAMITE," novelty short about lady wrestlers, was made in 48 hours, is author's most frequently televised film production.



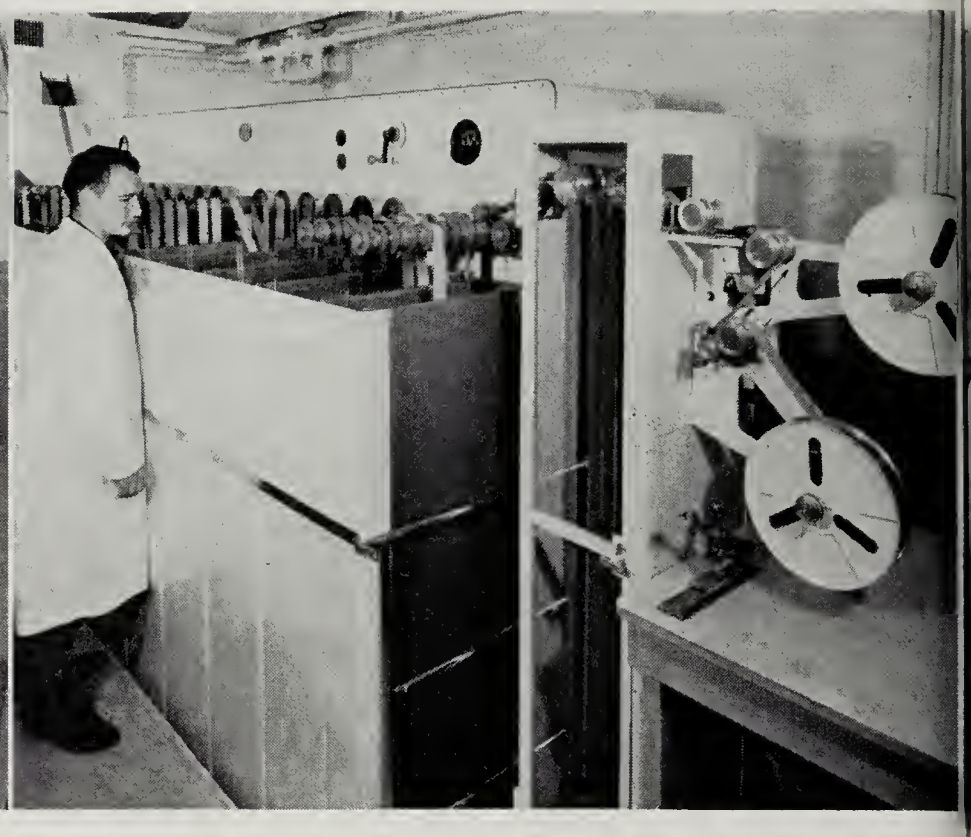
"DING-DING HEAVEN," created and filmed by author, relates what retirement is like for an old-time trolley car operating in an eastern railway museum.—Bob Presby Photo.



AUTHOR's "The Vanishing El" has been televised by every video station in New York City. It required 500 hours to complete, which, according to author, is "par" for average 16mm short subjects made by him.



FULLY ENCLOSED, dust-proof dry cabinet in foreground, dries and conditions processed film by means of warm, dry air, which is dehumidified, reheated and recirculated.



DARKROOM END of the new Arri color processing machine recently installed at Byron, Inc., showing the supply elevator and developing tanks. Film is constantly submerged while in developer.

Byron Opens New Negative-positive Processing Lab

Modern color film processing laboratory features Arri developing and printing equipment.

CULMINATING MORE than a year's planning, installation and testing is the Arri 16mm/35mm color and developing equipment now in full operation in the laboratories of Byron, Inc., Washington, D. C. Said to be the first installation of its kind in the United States, the new equipment extends the range of Byron's well-known "Color-Correct" processing to include the new negative-positive color films.

Arnold & Richter, of Munich, Germany, well-known throughout the world for their Arriflex cameras as well as other film production equipment, made the color processing machine for Byron according to the latter's specifications which included many new and exclusive features.

In a setting white and immaculate as a modern surgery room, Byron is now processing 35mm and 16mm color film on this unique equipment for which a separate building adjoining Byron's main plant was remodeled.

Because quality control is the essence of Byron negative-positive Color-Correct process, constant quantitative analyses of all chemical solutions are made. Each mix is checked before being pumped into replenishment tanks, and each solution within the processing machine is checked periodically during the day.

To insure uniformity, all chemicals are carefully weighed and clearly identified before going to the mixing room. There, rubber-gloved technicians standing on water-resistant cypress walkways, operate a long row of custom-built Alsop stainless steel mixing tanks which feature two propellor mixers. A flip of a switch sets the propellors in motion mixing chemicals with water at 70° F. Another flip of the switch and the mixed solution is pumped across the room to overhead replenishment tanks. Here accuracy of measurement is assured by a synchronous clock on the main control panel which regulates the replenishment rate. At a precise interval exactly one liter of solution flows from the tank to the machine. A unique feature is the floating stainless steel lids fitted to the replenishment tanks which prevent oxidation of solutions.

Refinement of processing solutions is a completely automatic and thorough process. Through an integrated recirculation system, dirt and products of oxidation are removed, and the solutions alternately heated and cooled to hold the temperature within plus or minus 1/8 of a degree F.

One of the cardinal points in the specifications submitted to the Arri company by Byron is that the processing machine keep the film constantly submerged while in the developer solution, to keep oxidation of developer to a minimum.

Control of water temperature for rinses and washes is maintained in the



CONSTANT CHECKS are made to insure maintenance of the high standards set by Byron for the Color-Correct process. Here sensitometric strips are exposed hourly, processed, then read on a densitometer.

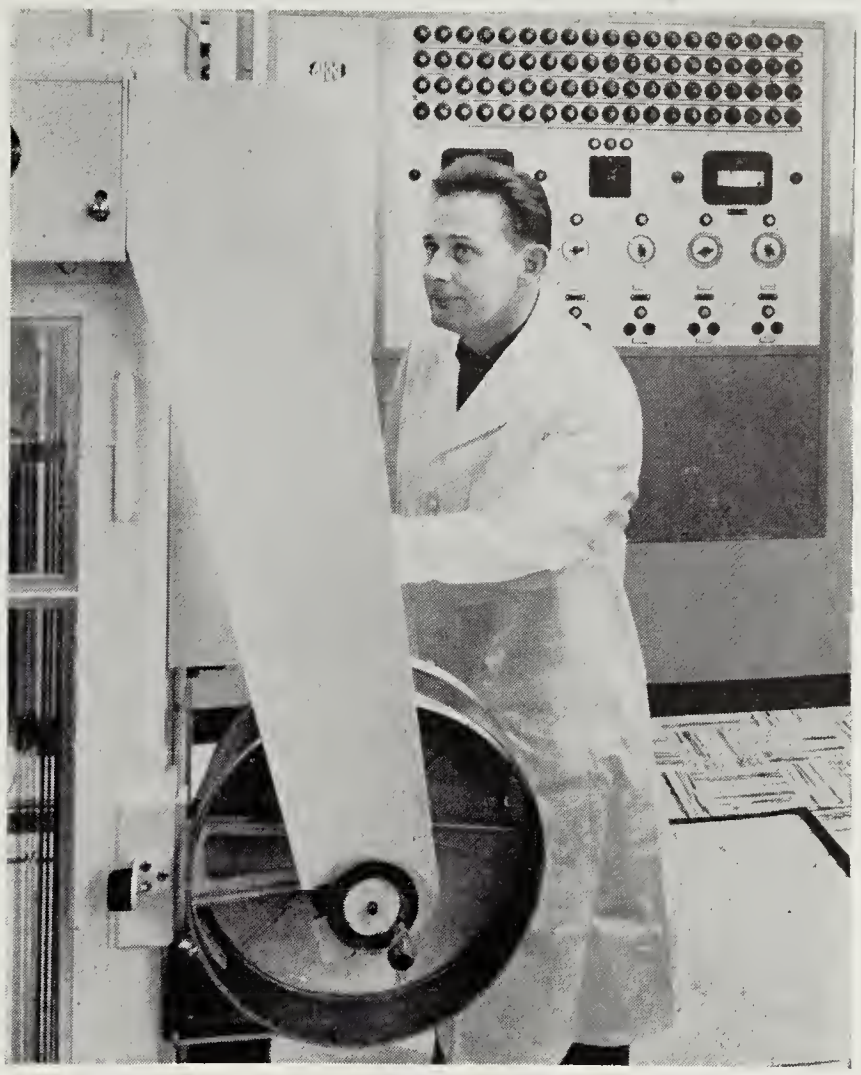
summer by mixing tap water with cold water supplied by a special chilling apparatus, which also provides cold water for the heat changers in the baths. In winter, hot water from two large gas heaters is mixed with tap water to provide wash water of correct temperature.

The processing tanks are of glistening white polyvinyl-chloride. Air squeeges are used before and after each bath to eliminate contamination of solutions. Vacuum squeegees remove all surface water before film enters dry cabinet and before it reaches the sound stripe applicator. Heated air is forced through the dry cabinet to dry the film, then it goes through a process of dehumidification, and is then reheated and recirculated through the tightly-closed cabinet which also features a unique static-eliminator.

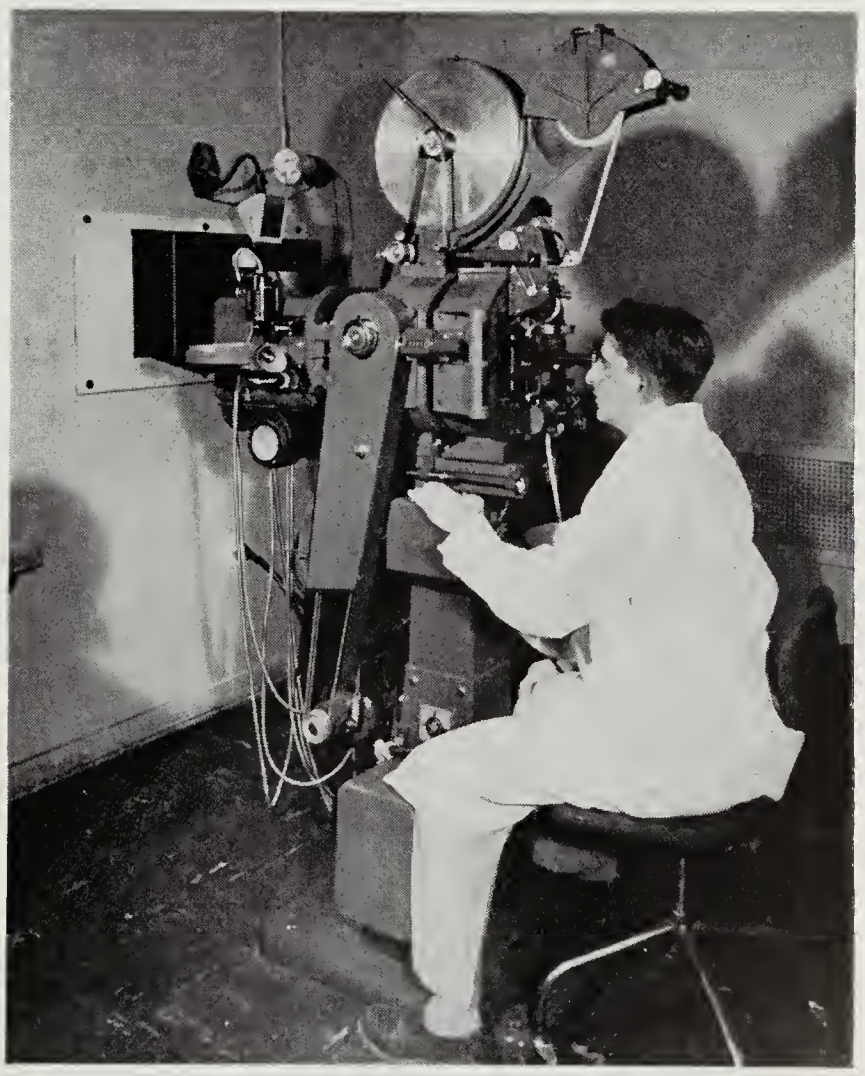
A master control panel enables the laboratory engineer to keep an "electrical finger" on the pulse of the whole processing operation. Constant checks are made to assure maintenance of the high standards which Byron has set for its Color-Correct process. Photographic sensitometric strips are exposed hourly, then processed and read on a Westrex color densitometer and plotted and checked against rigid standards.

The final step, of course, is the printing. Here the latest type Arri printer is employed. It incorporates an automatic

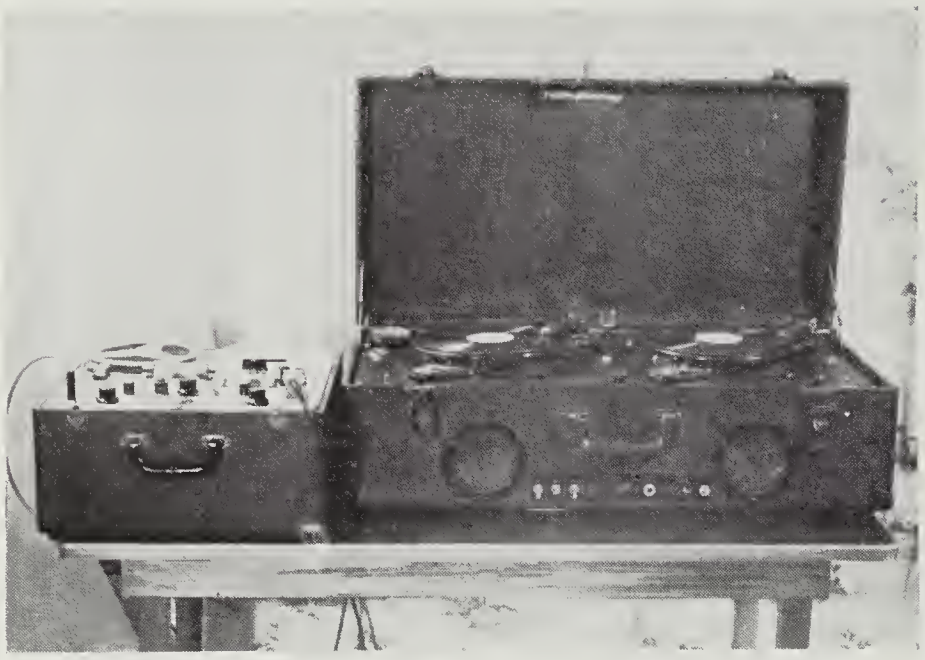
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MASTER CONTROL panel in background enables lab engineer to maintain "electrical finger" on pulse of operations.



HERE THE final phase takes place—the making of color prints on this Arri printer, which features an automatic fading device and automatic scene-to-scene color balancing.



AUTHOR'S arrangement of tape recorder and dual turntable used in recording sound tracks for home movies. Either ear phones or built in speaker may be used to monitor the recordings.



SIMPLE CUE STRIP slips over turntable spindle and indicates where to place needle on record for accurate starting of a recorded musical number or sound effect.

Sound Tracks For Home Movies

Simple technique for recording sound on tape for synchronous playback with films, using the coincident sound system described last month.

By JAMES N. WHITAKER
Technical Staff, Hughes Aircraft Company

THE PERFECTION of the Coincident (synchronized) sound system for home movies has opened the field of sound to all who are seriously interested in the production of entertaining home movies. The new recruit graduating from the "silent" to the "sound" group may be somewhat bewildered by the great possibilities now presenting themselves. and. without previous experience, may be at a loss as to just where to start.

The auxiliary equipment for setting up a sound track should include a timing device, dual turntables (preferably capable of operating at three speeds). cue strips for use in scoring the phonograph records. a microphone. an amplifier system having three inputs with provision for dissolving any one input into any other input or for mixing any two, and a pair of ear phones.

The timing device most suited for this purpose is a stop watch with a second hand which makes one complete revolution in 60 seconds, and having a minute hand capable of indicating up to 15 minutes of elapsed time. An electric clock having a sweep second hand can be used, but will be far less convenient.

The dual turntables should be of good quality and equipped with individual switches for starting and stopping each turntable. The pickup arms should be equipped with a pointer capable of providing an indication of register between the position of the head and a mark on the cue strip. (See illustration.)

The cue strips illustrated here are cut from five by eight inch index card stock, are ½ inch wide lengthwise of the card, and holes are punched in one end to fit over the spindle of the turntable.

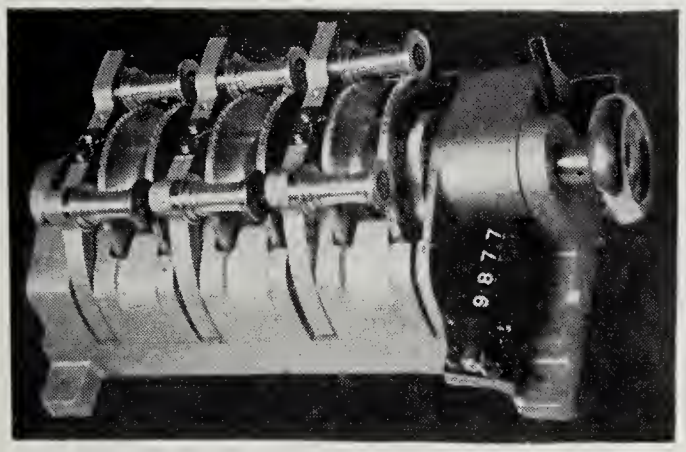
The amplifier may be a relatively simple preamplifier with provisions for mixing or dissolving three inputs. The output need not be at a very high level, since it feeds into the low level input of the tape recorder. It should have an output jack for connection to ear phones for monitoring purposes.

Most home film libraries are built up on a more or less "catch as catch can" basis, consisting of films made on vacation trips, etc., and of various random subjects. Regardless of any prefilming preparations or lack thereof, the film story is often changed to match the exposed footage, and the final story may

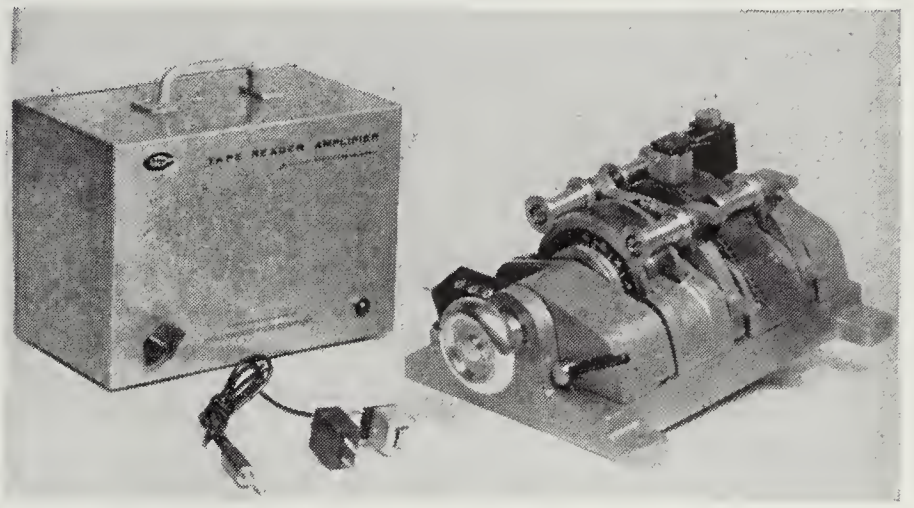
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SYNCHRONIZER HEAVEN





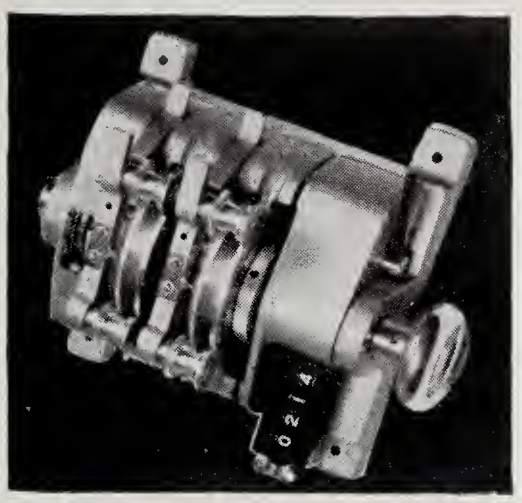
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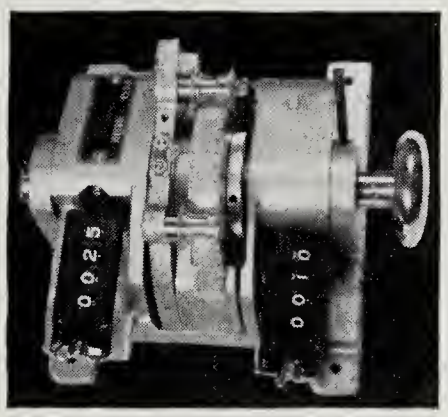
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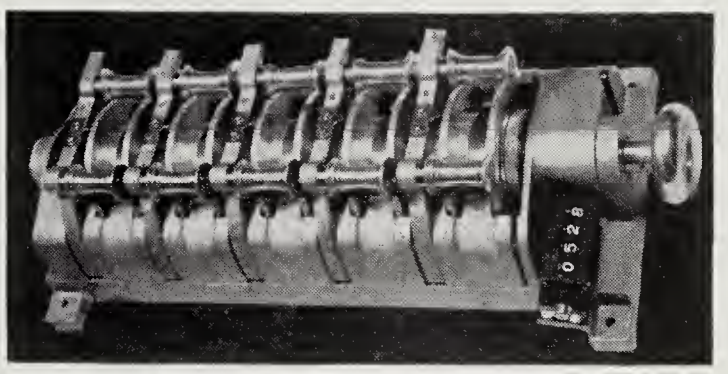
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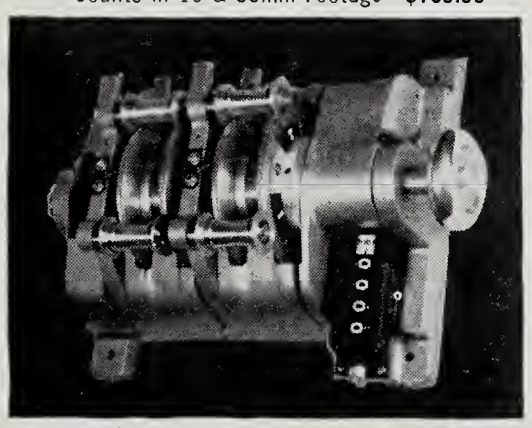
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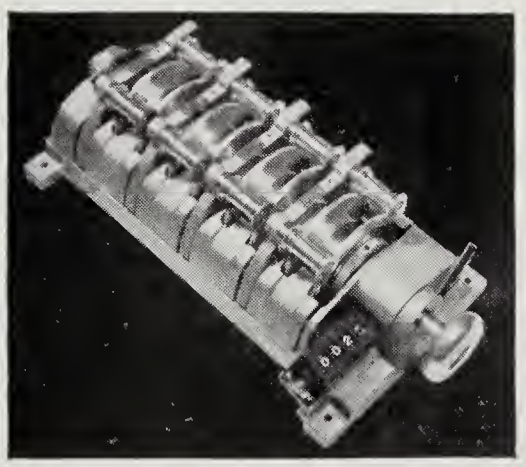
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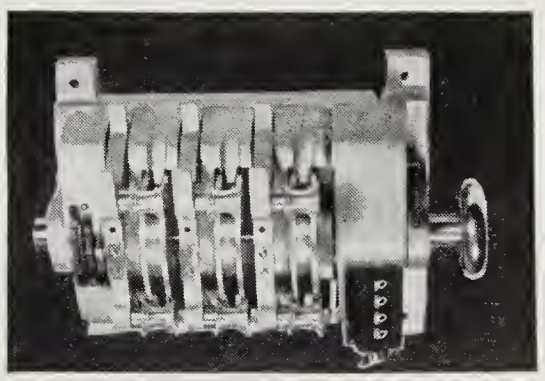
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Aspherics Promise Faster Ciné Lenses

Aspheric lens elements are lenses of non-round shapes. Their non-spherical form allows them to reshape light rays which are normally distorted as they pass through a spherical lens system.

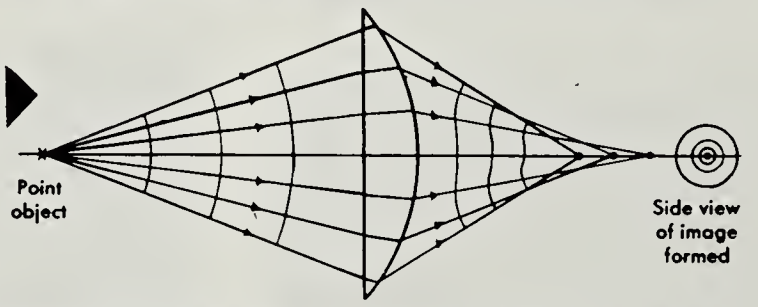
A LEADING NATIONAL financial and business publication back in 1953 said that the next aim of optics was the efficient production of aspheric lenses. It went on to explain that up to then lens designers spent much of their time correcting aberrations caused by the use of spheric surfaces—the only kind the industry could grind with reasonable efficiency. They concluded that if technology could devise practical methods for turning out aspherics, lens designers could revolutionize optics and successfully meet foreign competition built on low wage scales.

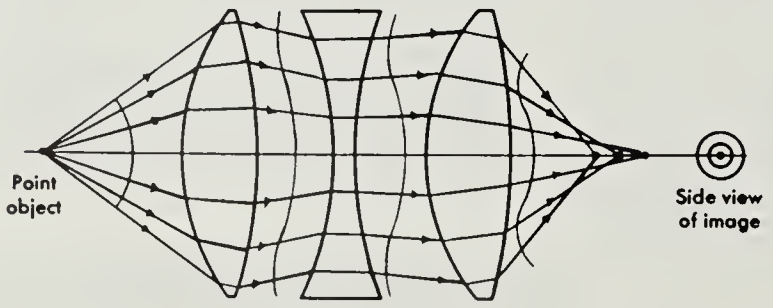
When this was written aspherics was still a dream. Optical science had searched incessantly for the means to faster speeds in lenses. Today, a quiet upheaval is taking place in the optical industry. After centuries of gradually improving the quality and performance of optical systems, the industry now finds itself able to advance the art and science of optical design and optical manufacturing at a rate undreamed of a few decades ago. The acceleration in the progress of optical design has been due primarily to the development of high speed electronic calculating machines. Using one of these machines, an optical designer today can accomplish in a few weeks what formerly would have occupied his efforts over a period of years. This rapid improvement in the theoretical design of new optics is not the complete story; new designs are significant only when they can be translated into actual optical systems by manufacturing. The recently acquired speed of the designer has presented a challenge to the optical manufacturer, because the designer can now compute with comparative ease several types of optics which can improve his designs but whose manufacture has long been considered difficult or impossible. This is the background which emphasizes the importance of one of the newest developments in the optical industry, the production in quantity and at moderate cost of high quality aspheric lenses.

Just what is an aspheric lens? In order to understand the meaning of the aspheric lens, one must first realize that almost all of the lenses used in cameras, binoculars, and other optical systems are composed of one or more elements whose surfaces are *spherical* in contour. That is, each surface has the shape of a part of a ball of a given size. For example, if one had a sponge-rubber ball of 2-inch diameter and sliced a small

TECHNICAL ASPECTS OF ASPHERICS

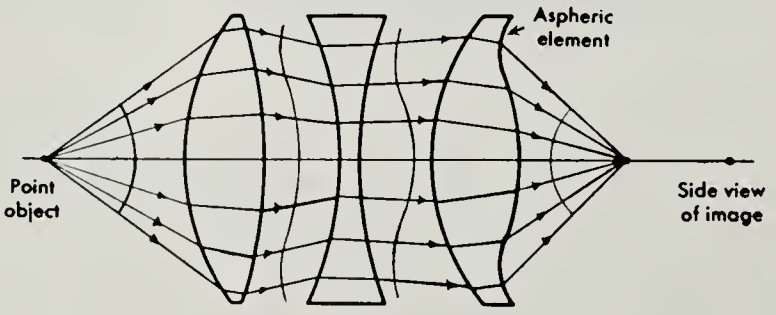
When light passes through a conventional spherical lens, rays do not meet at common focal point but spread either side of the film area with loss of definition.





By adding spheric lens elements to a system the lens designer reduces lens aberrations which results in sharper images, but with a sacrifice in lens speed.

Using aspheric lens elements the lens designer reshapes distorted light paths which produces sharp images with perfect resolution at ultra-high speeds.



part off with a straight cut of a knife, the small piece cut off would have the shape of one type of lens. This "lens" would be "plano" or flat on one side, and the other side would be a section of a sphere of 2 inch diameter. Spherical and plano lens surfaces have been used almost exclusively until very recently because they were much more easily made than any other types of surfaces. In fact, the usual methods for grinding and polishing lenses tend to produce spherical or plano surfaces automatically.

An aspheric lens, strictly speaking, is a lens that has a surface which is neither spherical nor plano. The surface can be a paraboloid, toroid, cylinder, or some other shape that can only be described by a mathematical equation. (It is in this sense the word "aspheric" is used in this article. However, among workers in the field of optics the word "aspheric" is becoming limited to only those non-spherical surfaces that possess a single axis of symmetry and are specified by a general mathematical equation.)

Precision aspheric surfaces cannot be produced by the almost automatic process used to make spherical or plano surfaces. Their manufacture has involved highly precise generating devices and extremely patient work by highly skilled opticians. It is, therefore, of little wonder that high quality aspheric surfaces have had little application in the past.

This is not to say that aspheric surfaces have not had application. It is interesting to note that they have been used both for extremely precise optical systems where cost is not considered, and for optical systems where the quality does not need to be high. An example of the use of aspherics of ultra-high quality is the astronomer's telescope. The surfaces of its lenses or mirrors are polished to fantastic accuracy. Only expert optical workers are competent to perform this operation and the cost and time prohibit such techniques from large quantity production. On the other hand, aspherics of low quality lend themselves easily to high quantity production methods such as molding or felt polishing. They have been used for condensers in still and movie projection systems, searchlight lenses, automobile headlights, magnifiers, and spectacle lenses. For photographic lenses, where relatively high quality aspherics are needed at a reasonable cost, aspherics have seldom been considered in the past.

But why is an aspheric lens so desirable? It is because an aspheric surface is capable of refracting light in a manner not possible with a single spherical surface. The lens designer has a number of aberrations which he must bring within tolerance. A single aspheric sur-

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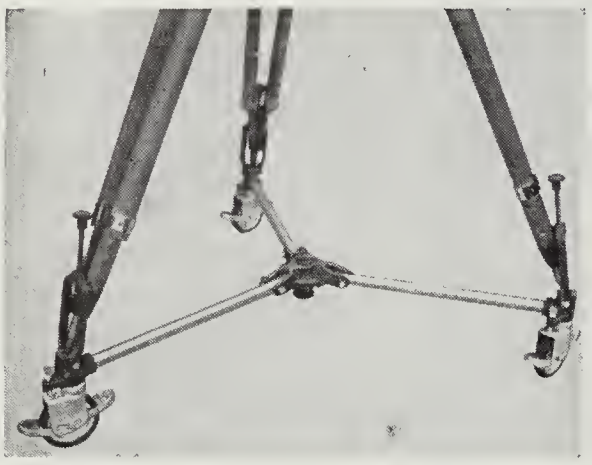
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face is capable of introducing controlled amounts of spherical aberration, astigatism, and distortion; these aberrations are used to compensate the aberrations of the rest of the lens system. This control is achieved by putting varying amounts of power in different zones on the surface of the aspheric. Spherical surfaces have uniform surface power and only the radius of curvature can be specified. Although the use of an aspheric does not automatically reduce all the aberrations to zero, it is a powerful tool with which to improve the performance of an optical system.

At the close of World War II, Mr. Roger Hayward of Mt. Wilson Observatory patented a process for polishing aspheric surfaces with a new type of flexible polisher. Before this time, flexible polishing had produced only moderate quality surfaces. By combining the advantages of flexible polishers and rigid polishers, Hayward succeeded in producing aspherics of extremely high quality. His method does not require the optician to perform the tedious and time consuming hand corrections that had been previously necessary. The most severe limitation of his polishing technique was that it had to start with a fine-ground aspheric surface of greater accuracy than was usually obtainable.

This difficulty was solved by Dr. A. B. Meinel, a brilliant young astronomer at the Yerkes Observatory. He developed a method for fine-grinding with accurately made grinding tools that could be machined to any desired contour. Dr. Meinel used the combination of his grinding methods and Hayward's polishing methods to make aspheric surfaces of excellent quality for his research in astronomy. The only question that remained was the practicality of these methods for commercial production of aspherics.

The optical industry today has started to prove that these methods can be used to produce high quality aspherics in commercial quantities. Several companies use Hayward's polishing techniques in making optical systems for the Air Force. The Perkin-Elmer Corporation uses both the Meinel and Hayward methods to produce a variety of as-

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pherics for both military and commercial use.

The outlook for photographic lenses is encouraging. It is safe to assume that before long the cost of making high quality aspheric lenses will permit their extensive use in amateur and professional photographic lenses. In fact, the Elgeet Optical Company has just announced the first of a series of ultra-high-speed photographic lenses incorporating aspheric elements.

Coincidentally, the Elgeet aspheric contribution comes on the firm's tenth anniversary. Its interest in aspherics began a few years back when it seemed certain that means had been found to produce superspeed films. The industry began at once to crane its neck for lens speeds to match the advanced film speeds. And once again the lens maker's dilemma became apparent. Speed could be had only at the sacrifice of clarity.

While the industry girded itself for a war of f/stops, Elgeet set its sights for a lens of far-reaching possibilities, a lens that would some day reach optical optimum. The Elgeet Golden Navitar, 12mm f/1.2 Wide Angle Lens for 16-mm movie cameras, is a 9-element lens, aspheric plus high index rare-earth elements. It offers cine cameraists the first aspheric movie lens and the world's fastest wide angle lens. It is 66% faster than an f/1.5 lens, covers 4½ times the area of a normal one-inch lens and delivers needle-sharp images over a 60° angular field.

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The above article was abridged from "Aspherics Come of Age," a paper by Robert H. Ginsberg, research associate at the Institute of Optics, University of Rochester, Rocheter, N.Y.—EDITOR.

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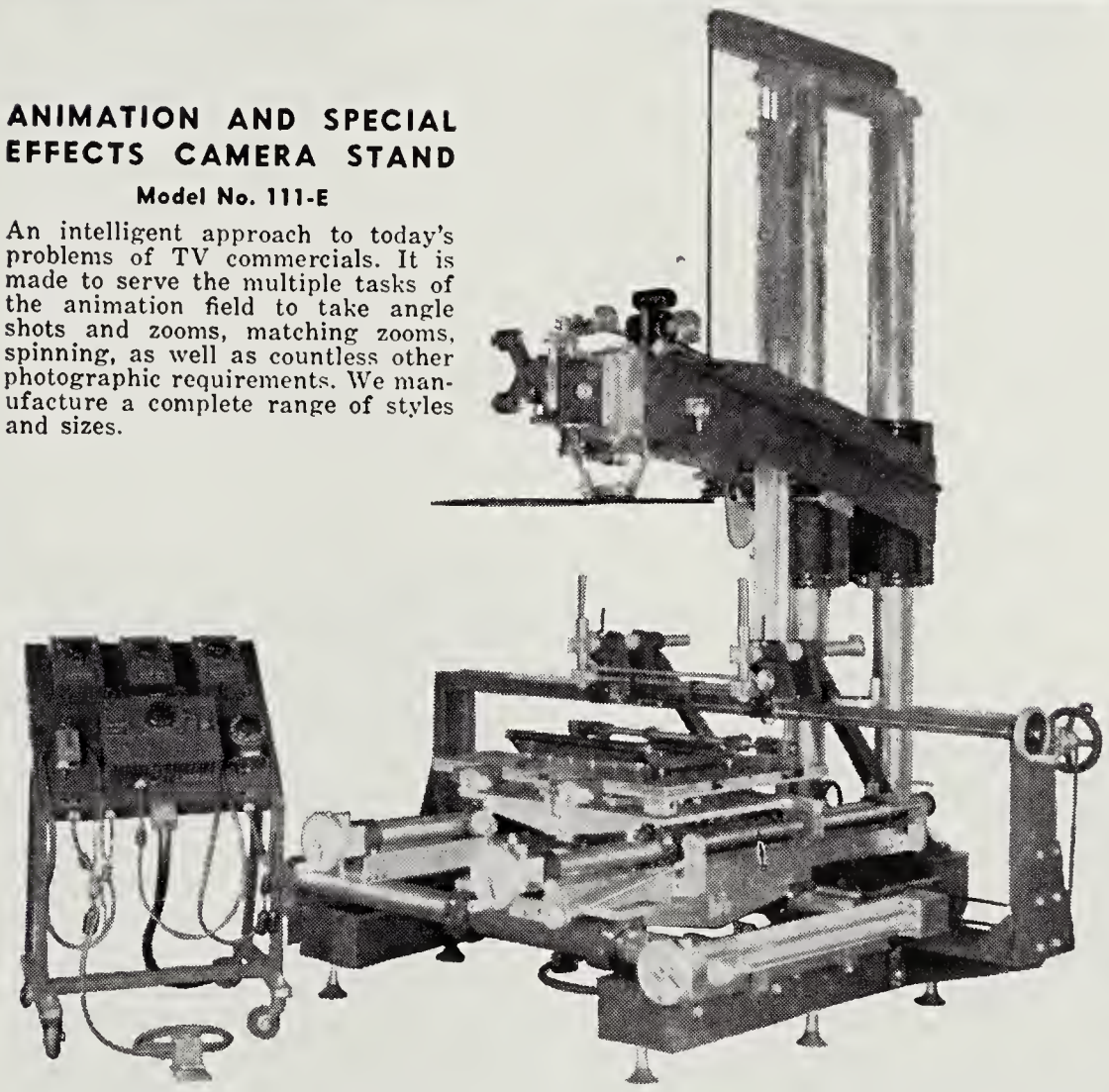
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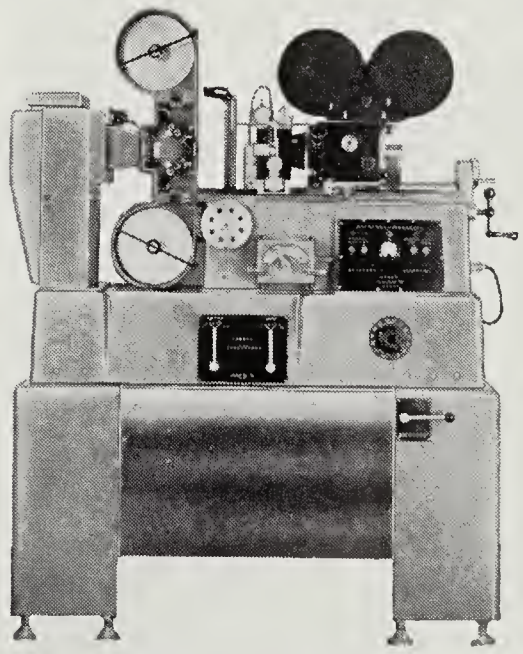
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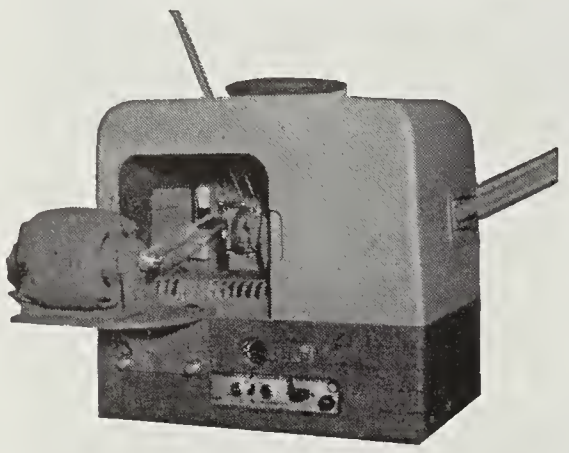
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PHOTOGRAPHING "THE FRIENDLY PERSUASION"

(Continued from Page 217)

belong in our pictorial compositions. We injected luster and light into the sets by projecting soft, diffused light from low angles, as through windows and doors; and while this light was full and rich it wasn't hard and sharp. And by thus gaining an extra stop in speed with Eastman Color negative, we achieved greater depth in the photography.

The stylized lighting employed permitted the fine woodwork of the interiors to take on a rich, warm coloring. At the same time, it brought into sharp detail the textures of the woodwork, and of the props and costumes, all of which were so essential in pointing up the atmosphere and the mood of the times.

One of the greatest challenges we ran into while shooting this picture was when we moved to the bedroom sets. There were two—one, the young daughter's, and the other occupied by her two brothers. Director Wyler wanted the girl's bedroom to have a poetic quality pictorially; the girl had just fallen in love, and in her bedroom she spends many happy moments rhapsodizing in her own little fairyland. The scene read great in the script, but when we went on the set and saw a room with a low, slanting ceiling that started at the floor line at one side of the room and ran up to only 6 feet in height, and was some 20 feet in depth, had one small window and a single door—well, we knew we had another real problem on our hands. The action called for the girl to promenade and pirouette back and forth the length of the room (creating a problem of depth, also) as she rhapsodized her love affair.

There was but one place for the camera, of course—right in front of the set, shooting straight into its 20-foot depth. There was the ceiling with its heavy beams. The little two-foot square window. It was a situation to discourage a guy, if he'd let it. But I often think that a challenge of this kind is what a director of photography needs to bring out the best in him—or at least to prove his ability. Fortunately, director Wyler isn't one to rush a man in a situation of this kind, so there was ample time to give this set the special treatment it required—lighting from the floor, light bounced off walls, and light coming through the window, etc., to create the idyllic scene that Wyler had in mind.

In such situations as this we had the unstinted cooperation of the art director and his staff. Many times I had to resort to the use of additional color in a scene because I couldn't put light into a particular area. So I'd have one of the art staff put in a spot of blue or of red—some logical object of set dressing. This tended to give the set more solid structure, pictorially speaking, and to relieve monotony.

Earlier, I mentioned that I used mirrors to re-direct light when the set precluded use of the necessary lamps. I would throw a beam of light into the room through the window to create a pronounced sheen on a wall; then behind a chair I would conceal a mirror, which was turned at an angle to redirect the illumination to produce a needed highlight in the scene. Mirrors were used in such instances because the objects (chairs, etc.) usually were not large enough to conceal a set lighting unit.

Naturally, in such confined interiors, we had to be extremely careful in lighting the individual players. Director Wyler never believes in holding his players within the fixed confines of chalk marks on the floor. Thus, if a player when reading his lines felt like walking three feet further than he did in the rehearsal, Wyler let him do it for the more natural effect that resulted. This imposed the problem of modifying the intensity of the light falling on the player as he moved in order that he would not "burn up" when approaching the light unit directed upon him. This was accomplished by stationing grips at every strategic lamp on the set, each with three scrims of different densities. If a player walked beyond the prescribed area, I would signal the grip at the strategic lamp to place the proper scrim before it in order to diminish the light falling on the player.

I encountered another unique situation on this picture not commonly found in the average production. William Wyler, directing this picture in his own inimitable manner, sometimes decided to shoot a particular scene with three cameras in order to maintain continuity of action, yet have a variety of camera angles to cut to. Thus he kept three cameras and crews on the set daily until the production was finished. Three cameras shooting simultaneously, each from a different angle, presented an obvious lighting problem: what was the key-light for one camera became a cross-light for another. The remedy, of course, was to attain a very delicate balance in the overall lighting, particularly because on most scenes shot with three cameras we would have as many as six people on the set. But it was when Wyler wanted the three cameras to shoot simultaneously a "big head"

closeup, a two-shot, and a full figure shot of all six players moving about the set, that the real lighting challenge presented itself.

I have been asked what ratio I used in lighting the sets. Here I threw the book away. In shooting a story of this kind, there should be no fixed ratio; no "don'ts" to adhere to. Instead, I felt that the lighting should be adapted to the mood of the story, and that is what we did in lighting all the interiors of this production. I think that the success in lighting sets such as we had to deal with was more a matter of knowing our lighting tools and basic exposures.

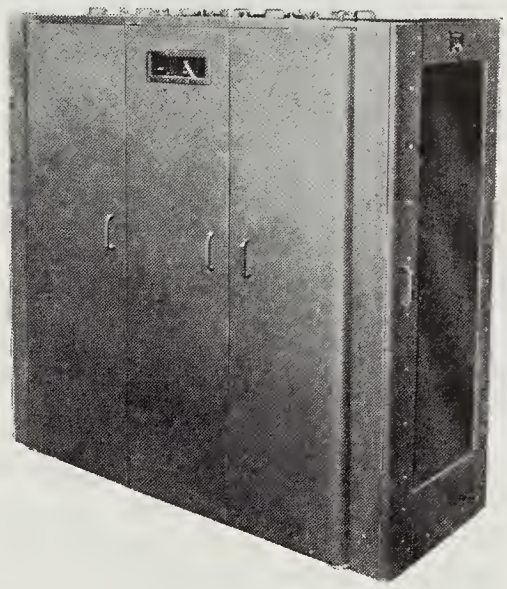
"Painting with light" is a term we often hear in connection with cinematography. It is most appropriately used in describing the use or projection of colored light into a set or on a subject in order to point up or enhance the mood in which the scene is being played. I utilized this technique many times for the very purpose. For example, there were few happy moments in the life of the Quaker family around which this story revolves. They were nevertheless a happy people and extremely religious, and when we did come to the few gay moments in their lives (as set down in the story) such as a departure of a member of the family to visit a distant relative, or of the daughter in love, mentioned earlier, as she daydreams, colored light was employed to enhance the mood called for.

In the scenes of the daughter in her bedroom, soft, pink light was lavishly used. In contrast were the scenes when Gary Cooper would sit down with his wife for a cup of coffee, or during the evening meal; here I used warm, yellow light abundantly. The colored light was achieved, of course, by placing colored gelatin filters in front of the set lamps.

There will be those who will take exception to this technique, saying perhaps that such color isn't natural. But I feel that a cinematographer or a film producer has the same license—the "poetic" license, if you will—to utilize color for effect just as the old master painters did, as we so convincingly saw in those memorable paintings in the Mellon art gallery.

Indeed, I was actually challenged on this later when it came time to shoot an indoor exterior of a farm house. The time of the action was dawn and there was the proper backdrop in the form of a skillfully painted cyclorama in back of the set. In lighting this set, I felt that a touch of pink light would enhance the feeling of dawn pictorially. "When did you ever see pink coloring in a dawn?", I was asked. I wasn't sure that I ever had; but I had seen paintings in which pink had been used very subtly

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and with great effect. To cinch my case, I produced a Maxfield Parrish painting of a dawn scene in which Parrish used pink hues most effectively.

I think it is very important that the cinematographer on a production work closely with the director and the producer in order to do everything possible photographically to establish and sustain the mood of the story. I don't think that many directors and producers today are aware of what this can mean to them and to the success of their production. They usually walk on a set and take it for granted that "you just light it, that's all!" But if they would only take the time to plan the lighting with their cameraman in advance and to evaluate his suggestions, they would be amazed what can be accomplished by careful, studied lighting to bring out textures, to enhance mood, and to point up characterizations which invariably are so important to a story.

I have dwelt so far only with the techniques employed on the interiors of "The Friendly Peruasion," simply because interiors demand a lighting technique that obviously cannot be applied to exteriors. Unfortunately lack of space precludes going into the "exteriors" phase of the production, but suffice to say that for the most part, conventional techniques were employed in all.

In closing, the thing I should like to stress is that if the cinematographer will capitalize on what he feels are the obstacles, production-wise, he will come off all right; because invariably, if he will take the time to think out his problems, and if he has a cooperative director, solution will come easily.

I have stressed the great contribution to the lighting and staging of this production which resulted from my chance visit to the Mellon art gallery. I think that every director of photography can always find ideas and perhaps answers to problems through careful study and analysis of the works of the old masters. In such paintings he will find an assist or an answer in these days of high-pressure production when the average cameraman doesn't have enough time to analyze or digest in advance the production to be filmed, and therefore is unable to properly think out what is to be his line of approach.

I think that stylized lighting of a production to underline the story theme is just as important as the theme music, for which studios spend great sums. Just as the music score is created to enhance the dramatic values of the production, aurally, so also the photography, when properly planned and executed, makes a similar contribution pictorially.

WHAT IS THE ACADEMY?

(Continued from Page 221)

industry in many other ways. It maintains an important and growing library of motion picture memorabilia and technical and research information, which is a mainstay in studio activities. It owns and operates its own theatre—the Academy Award Theatre — which is used for press previews, old film showings and screenings for studio employees. It functions importantly in the fostering of international aspects of the industry insofar as Hollywood is concerned. It sponsors the produciton and exhibition of industry documentary films. It is presently planning an International Film Congress. It publishes quarterly the Players' Directory, the bible of studio casting directors. Bulletins of screen achievement records are issued periodically to aid writers, directors, producers and technical craftsmen in keeping up-to-date published accounts of their activities. It sponsors the annual Hollywood Studios Still Photography Show.

Craftsmen in the film industry recognize that the Academy has the same influence in its field as an institution of higher learning does in a community. Through its vast library it is a source of knowledge. New ideas in technical, artistic and cultural fields fostered by its diversified membership have been of far reaching consequence. All branches and divisions of people within this structure look upon the Academy as a staunch champion through the solidarity of organization.

Since 1929, when the late William De Mille succeeded Douglas Fairbanks, Sr., as president, there have been eleven Academy presidents, some—like Charles Bracket—serving several terms. Producer-director George Seaton succeeded Bracket as president last year. Since the big Oscar night last month, Seaton has been lauded for having directed one of the slickest, most successful Academy Awards presentation shows in the history of the organization—his first, incidentally.

Relatively unsung over the years is the capable staff directing the Academy affairs from offices within the Academy Award Theatre in Hollywood, and headed by Margaret Herrick, Executive Director. A former librarian from Yakima, Washington, Mrs. Herrick is credited with starting the Academy's

valuable library in her spare time in 1936. She is also credited with having given the name Oscar to the Academy's gold statuette. In her capable hands, the Academy has functioned smoothly for more than two decades.

Aiding Mrs. Herrick is Sam E. Brown, the Academy's Assistant Executive Director, in whose competent hands many Academy problems are placed for solution, especially around Awards time.

When the library, which Margaret Herrick started out-grew its spare-time status and developed into a major Academy function, Betty Franklin was added to the staff and subsequently placed in charge—a post she still holds.

The Academy Library is a veritable mine of information for those seeking the history and development of motion pictures. It is the largest of its kind in the United States and one of the most complete in the world, and is cross-indexed to provide information covering all aspects of the industry. More than five-thousand books, periodicals and other publications about films are sandwiched in with quantities of printed detail concerned with radio and television as they affect the film field.

The value of these records is indicated by the constant use made of them by studio personnel, especially research departments, publicity offices and studio film libraries.

An analysis of a typical day's activity at the premises shows that inquiries range from requests for photos for use in illustrating stories, to lists of films having similar subjects or sequences such as a dream sequence, an American history sequence, a horse racing sequence, etc. Historical characters in films and who portrayed them in what picture is another topic in frequent demand. Biographical films about musicians; information about women as murderers in pictures and how they killed their victims; location information, such as data concerning the Australian coast, a little known island in the Carribean, a section of London—all are compiled in rapid style.

Also sought after are casts and synopses of old films; the title of motion pictures where the questioner remembers a fragment of the plot or of specific individuals such as film editors, cameramen, costume designers; names and addresses of organizations; identity of studio department heads; dates of births and deaths of Hollywood notables; story rights and story purchases; and what happened to old producing companies.

Much correspondence is maintained with students in out-of-state schools who write to film studios requesting information. These letters are forwarded to the Academy library for answer. Subjects of questions are of all types; history of newsreels; the application of the



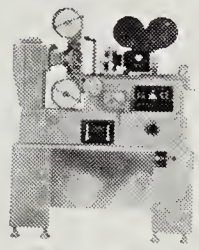
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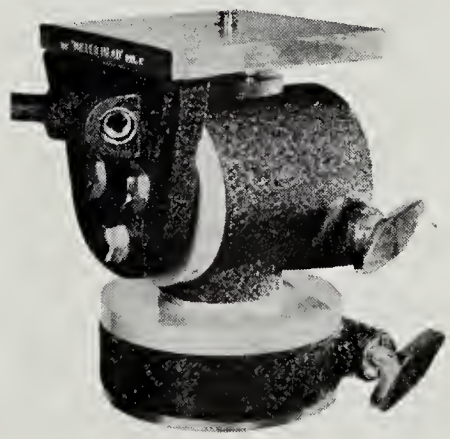
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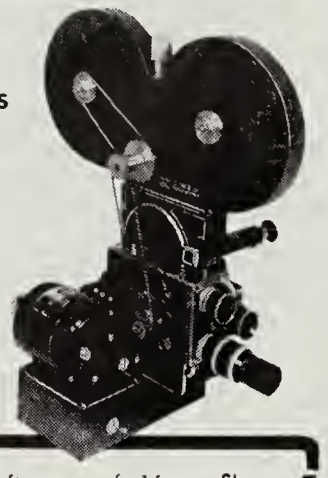
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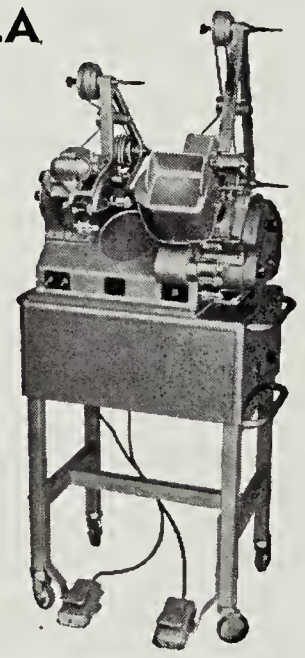
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documentary technique to feature films; types of publicity campaigns; uses of miniatures; lighting effects; adaptations of films for future uses in schools and churches.

The library attendant takes into consideration the general knowledge, school subjects, scholastic standing and local library facilities available to those asking questions and frequently suggests literature written in foreign languages as a further assist to obtaining the information needed.

Among the rare books and records housed in the library is the complete business history of one of the world's first film producers, Colonel William Selig, a Chicago pioneer. Included is a hand tinted motion picture of the first all color film, "The Coming of Columbus," photographed in 1912. Among the historical camera equipment in this collection is a Selig polyscope, samples of odd-size films (pictures were not always made on 35mm stock) and many interesting early-day celluloid efforts.

A visitor inspecting these rooms would also come across the Richard Barthelmess collection, forty-eight scrap books prepared by his mother, each devoted to a specific picture in which he starred. The books contain reviews, fan magazine material, general publicity and other copy pertaining to a particular film.

Recent donors of similar collections are Walter Wanger, Jean Hersholt, Mack Sennett and Sol Lesser.

Other valuables include the complete file of "Sight and Sound," famous English critical quarterly, volumes of early day trade papers, both foreign and domestic, and bound issues of all present day film trade journals.

There is an air of nostalgia in the "morgue" of more than 20,000 picture folders. This limbo contains photographs of long-forgotten motion pictures and of stars whose names shimmered brightly in the flickering lights in the yesteryear of show business.

Here are carefully preserved "stills" of Alla Nazimova, the screen's silky siren; William S. Hart, the two-gun hero; Clara Kimball Young; Theda Bara; Francis X. Bushman; and Constance Talmadge; Fatty Arbuckle; Tom Mix; Jean Harlow; Mary Pickford; and countless others whose fame will never die.

There is categorical information covering more than nine thousand actors, writers, directors, producers, musicians and film editors from the early silents to today's titanic productions.

Studios call for help in compiling records of their own early years and perhaps to supply lists of films produced by them in the forgotten past. The library did considerable research on the history of sound pictures for Warner Brothers Studios when they celebrated the twentieth anniversary of audible films.

The library is not just a storehouse of printed material. Progress is being made in the development of a permanent film collection which it is anticipated will contain all of the important pictures of the past, present and future produced in Hollywood. Complementing this will be a selection of foreign films to be obtained on a reciprocal basis. Showings of these pictures are offered to the Academy membership and students of film technique.

The orgin of "Oscar" has been a source of keen interest to people everywhere and many are the myths that have sprung up around this golden achievement trophy.

It was in early 1927 that a decision was made to provide the Award of Merit for outstanding achievement in the form of a statue.

During the first discussions, Cedric Gibbons of the art directors absorbed the various suggestions and sketched the impressive figure on a tablecloth. The drawing was carefully removed from the napery and turned over to sculptor George Stanley, who executed the first year's small roster of statuettes in solid bronze.

A couple of years later, a mold was made, and thenceforth the figures were cast in Britania metal, used also by the silversmiths of Sheffield, England, in their crafting of fine tableware. And then a coat of pure gold was applied to give the prized gleaming surface to the little figures.

This same mold, kept carefully in a locked strongbox between use, is still used in the manufacture of Oscar's annual quota.

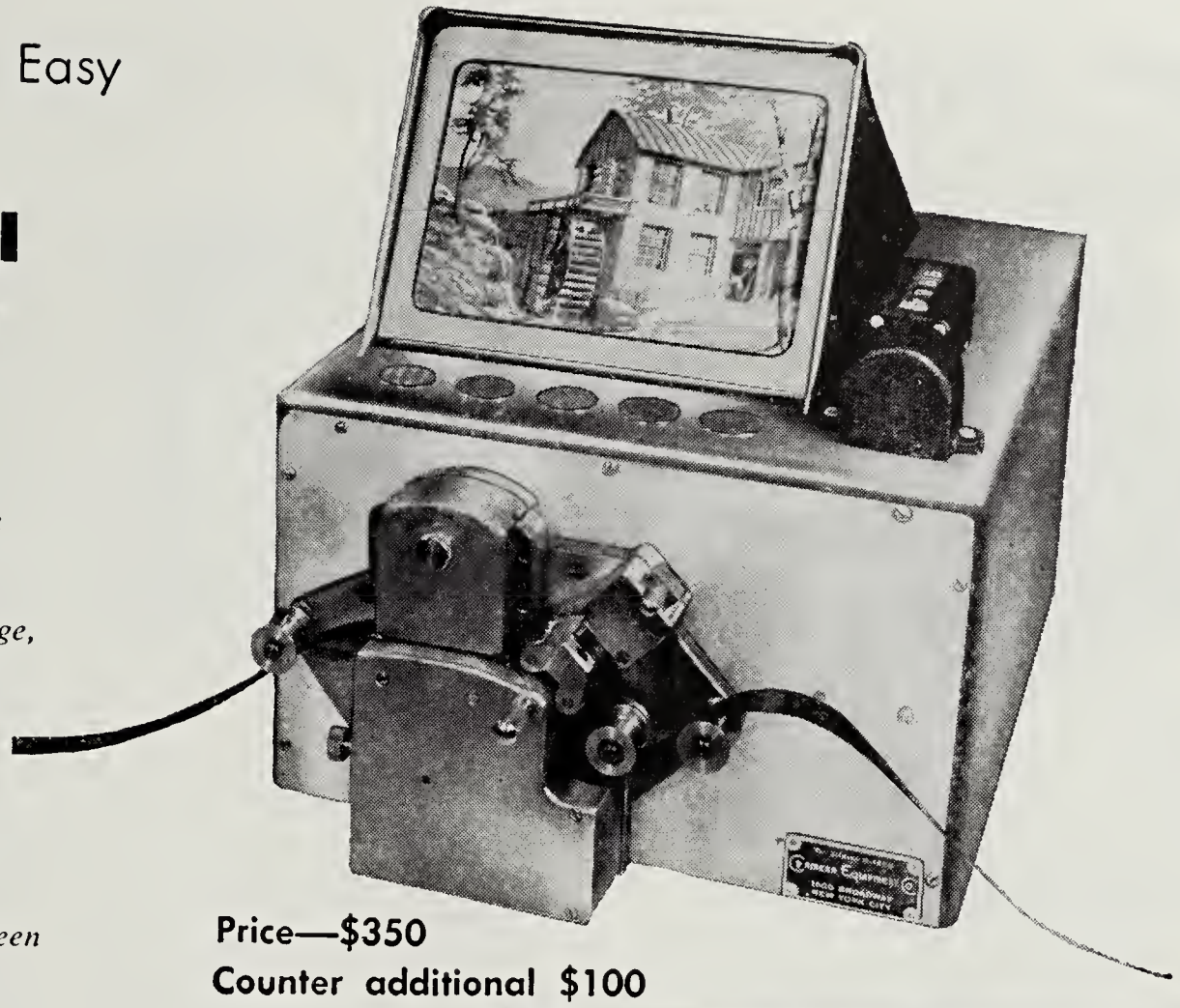
The most widely accepted story of how Oscar got his name attributes it to Margaret Herrick, now the Academy's executive director but then its librarian. When she saw the first completed figure she exclaimed: "Why, he looks just like my Uncle Oscar." But the name stuck, and Academy employees used it familiarly until one day, it is said, columist Sidney Skolsky visited the place, picked up the item and ran it in his syndicated column.

At the age of 28, and in as good as shape as ever, Oscar is fast becoming a truly legendary figure. Although he has reached a quantity of 782—all presumably identical—there are no two of him exactly alike. And despite his annual increase in numbers, no one thinks of him as anything but one person, the most sought-after, hard-to-get, coldly impersonal and at the same time warmly gratifying individual known to Hollywood. **END**

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ARRIFLEX ACCESSORIES

(Continued from Page 226)

10 volts, 60 cycles, but can be converted to other voltages and frequencies on special order.

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By depressing the switch button, the motor will turn over and make one exposure. If button is held down, motor will continue to run at 60 frames per minute.

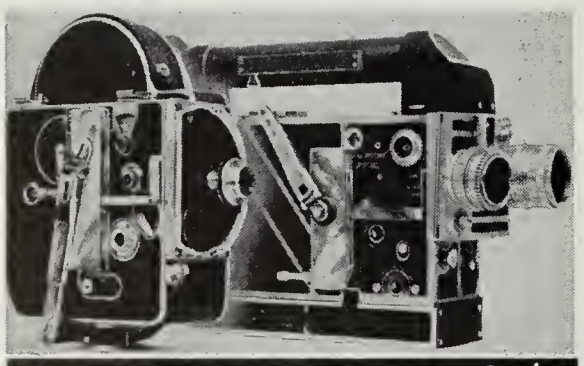
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ASSIGNMENT IN NEW GUINEA

(Continued from Page 223)

of nearby Goroka, possessing as it did its own generating plant which gave electricity to the grass huts, a mammoth deep freeze for supplies and special refrigerators. These were unknown luxuries in the highlands where everything has to be flown in to the area.

However, after this initial location of comparative comfort the unit moved rapidly to the four corners of New Guinea, operating in rugged areas where vital equipment had to be transported by hand across turbulent rivers, up precipitous mountains and through crocodile-infested lakes and rivers of the interior.

Because of this difficulty in operation, the crew and equipment had to be kept to a minimum and the major moves by special charter planes had to be carried out with extreme efficiency to insure no loss of shooting time. In many instances the camera crew and director were the last to board the plane and did the required aerial shots while flying from one location to the other.

The camera crew, as chosen by the joint producers for the job, were myself as director of photography; Bill Grimmond, camera operator; Ken Lankshear and others, assisting.

This Australian unit which has had considerable experience, particularly with location films in and outside Australia, had just finished shooting an Eastman Color half-hour T. V. series for Byron Haskin and Joe Kaufman. This series, shot in Australia, was called "The Adventures of Long John Silver."

From the outset, producers and cameramen agreed that for such a new venture in such difficult terrain, only the most reliable camera equipment could be considered. Therefore a new Mitchell N. C. with all its latest trimmings of parrallax-corrected finder, together with a French 35mm Camerette were purchased for the production.

As two versions of the film were produced, one in English and one in French, a good deal of simultaneous shooting was done for action shots, using both cameras. This double shooting proved invaluable for the big scenes in the film when more than 12,000 fully-decorated natives participated in a sequence where they act as a giant steamroller to flatten 12 ft. high kunai grass and make an improvised airstrip. Material for parts of this sequence, shot on a gigantic scale, could only be obtained once.

The camera gear was specially cared for by the operator, Bill Grimmond, who worked in Samoa recently with Winton Hoch, A.S.C. Bill kept on setting up his dehydration box, which allowed for the camera and lens plus accessories to be dried out every night by means of a low-voltage electric globe and desiccators. We are happy to say that, at no stage, was any trouble encountered with either camera.

The Eastman Color negative, both exposed and unexposed, was kept in a special refrigerator at low temperature.

This refrigerator was taken on all moves throughout New Guinea from the moderate climate of the Eastern Highlands to the steamy jungle heat of the Coastland and along the swampy areas of the Sepik River. Fortunately, the film stock remained in perfect condition throughout the shooting.

Consignments of rushes, packed in dry ice and re-checked and repacked at every port on the way, were consigned by air every 10 days to Paris, where it was processed at the Eclair laboratories.

It was my first job with this big film laboratory and the splendid coordination between laboratory and cameraman before and during shooting of the picture made the photographic assignment a very happy one. Results proved to be tops with both producers and laboratories and not one retake was required.

Owing to the difficulty of operation it was also necessary to limit the number of lights and the only equipment used were two MR 120-amp arcs, four 5kw spots, three baby spots and numerous photofloods. The generator used was a small 25 k.w. unit.

This power supply was sufficient for the small amount of interior shooting, all of which was actually done on location. It was also of inestimable value for use within limited areas of exterior shooting on overcast days.

As small as they were, they kept us shooting all the time and when exposures in the dense jungle areas of Madang were as low as T2.8 they gave us a useful booster light on the actors' faces.

As the tropical weather of New Guinea consists of endless days of hazy atmosphere and overcast skies, we were obliged to work to alternative schedules with interior shooting of small sets held as a cover against dull weather, and when these were finished it was necessary to incorporate sequences in dull but very effective light.

We also utilized a large number of reflectors which, when the sun was right, gave us the only booster light required.

Most of these reflectors were held by natives who were recruited and instructed in the job. In a comparatively short time they learned by hand signals how to set reflectors, which were then carefully checked by the gaffers. Although

they obviously had no idea just what they were doing, the results were extremely satisfactory. Large numbers of natives were also used as general grips and many of them were extremely adaptable.

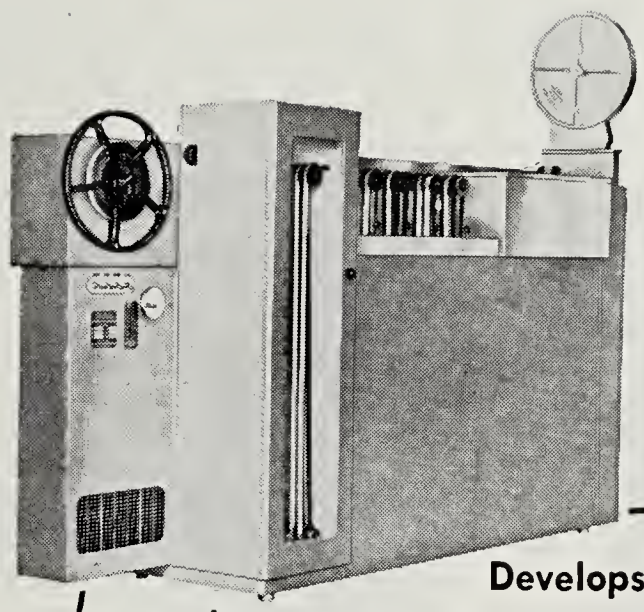
In addition to being recruited as technicians, quite a number of natives were chosen to play featured roles in the film and every one of them showed remarkable aptitude for acting.

This of course is understandable when it is realized that their corroborees and native dances are all based on story-telling and mime. Although they did not understand exactly what was happening, they were tireless in their ability to repeat a scene many times exactly as instructed and were very quick to learn their first instruction—never to look at the "bokis" or camera.

One of the chief difficulties in handling the large native sequences was the language, as very few spoke even Pidgin English.

In order to direct each scene, Lee Robinson had to speak in Pidgin to the various interpreters—or "turn-talks"—who would then relay the message to as many as six different tribes of natives.

Pidgin English, in itself, requires a great deal of play acting and description, and is a lengthy process. For instance, in order to convey that a take



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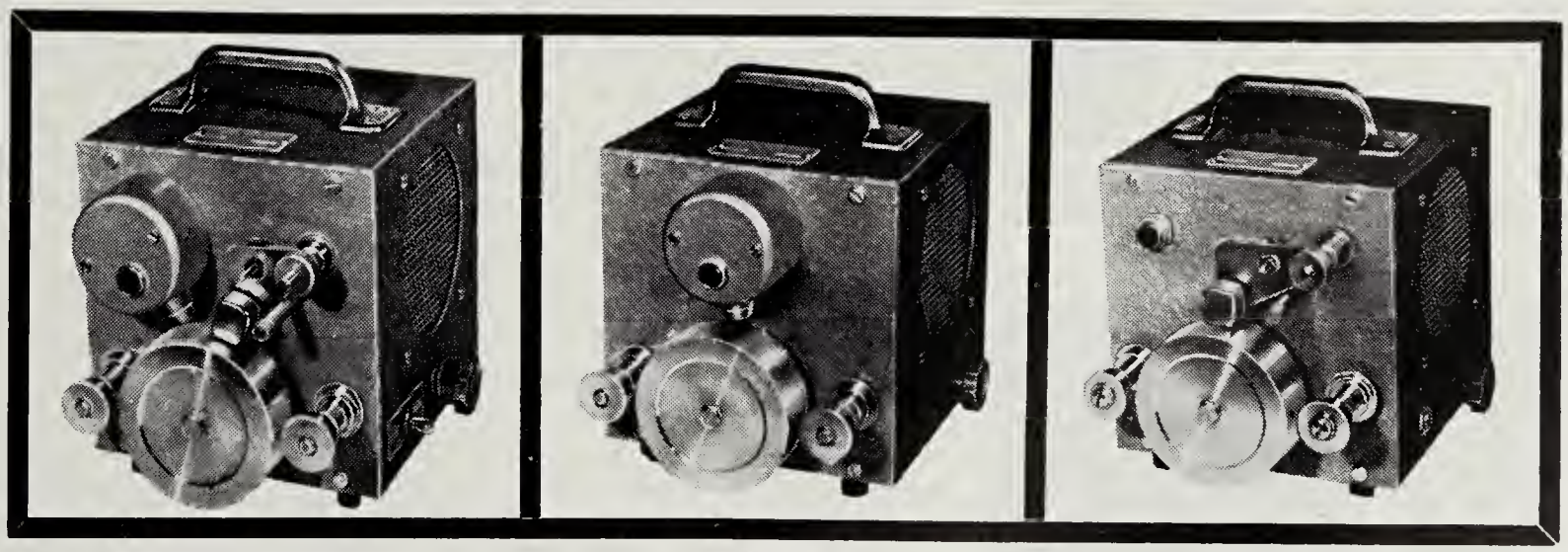
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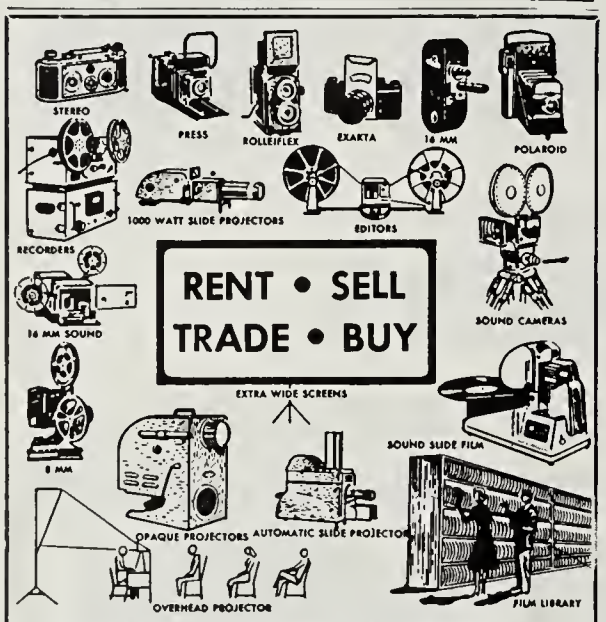
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and not rehearsal was coming up and that the natives in this scene had to gradually lower bows and arrows and stare in amazement at an airplane which has just landed O/S, it was necessary to embellish the instructions as follows: "Now this time all 'e workim strong and true. Im 'e no gamon. Im 'e no lazin' about lazin' about nothin'. All man 'e sleepim bow and arrow and im lookim along strong along balus. Mumma bilong Thunda im 'e come and sittim along ground now."

From their simple eagerness to enact these stories for the "Poppa bilong picture," as the Director was called, it was difficult to remember that these warriors, armed with their tall deadly spears and stone axes, were only recently savage cannibals.

However, whether on location in the picturesque but primitive villages of the Highlands or on the more civilized mainlands of the coast regions or in the remote Venice-like villages of the Sepik River where giant 50-foot canoes are paddled by magnificently built Meris or native girls, the cooperation we received from the New Guinea natives was magnificent and it was largely due to their efforts that we were able to finish the picture within our 13 weeks' schedule.

In addition, of course, we were afforded unlimited assistance by the Administration officers in New Guinea, without whose cooperation it would not have been possible for this film ever to have been made.

Throughout the production, the relationship between the French and Australia crews was perfect. The French members, although transported overnight from the heart of Paris to what is probably the most uncivilized country left in the world today, quickly adapted themselves to the new background and considered that the assignment was the most interesting and unusual that they had ever undertaken.

"Walk Into Paradise," which has now been completed, is the Australian entrant in this year's Cannes Festival and, in Paris, where it has been previewed, the response has been particularly gratifying.

Now that the production has been completed, everyone connected with it feels that the difficulties and hardships endured during the shooting were worth while and that in "Walk Into Paradise" they really have an unusual film which should prove of unique interest to the world.

SOUND TRACKS FOR HOME MOVIES

(Continued from Page 244)

only remotely resemble that which was originally planned. This is more often an asset than a liability, for it is usually impossible to exactly predict in advance the opportunities which may arise to photograph the unusual.

Whether or not the entire story is planned in advance, the film is first edited and the scenes re-arranged until a continuity with well-defined theme and smoothly-flowing action is created. The background music and sound effects are then selected, and the dialogue arranged to complement the screened action. Each sequence is carefully timed and cue points noted, after which the sound track is recorded.

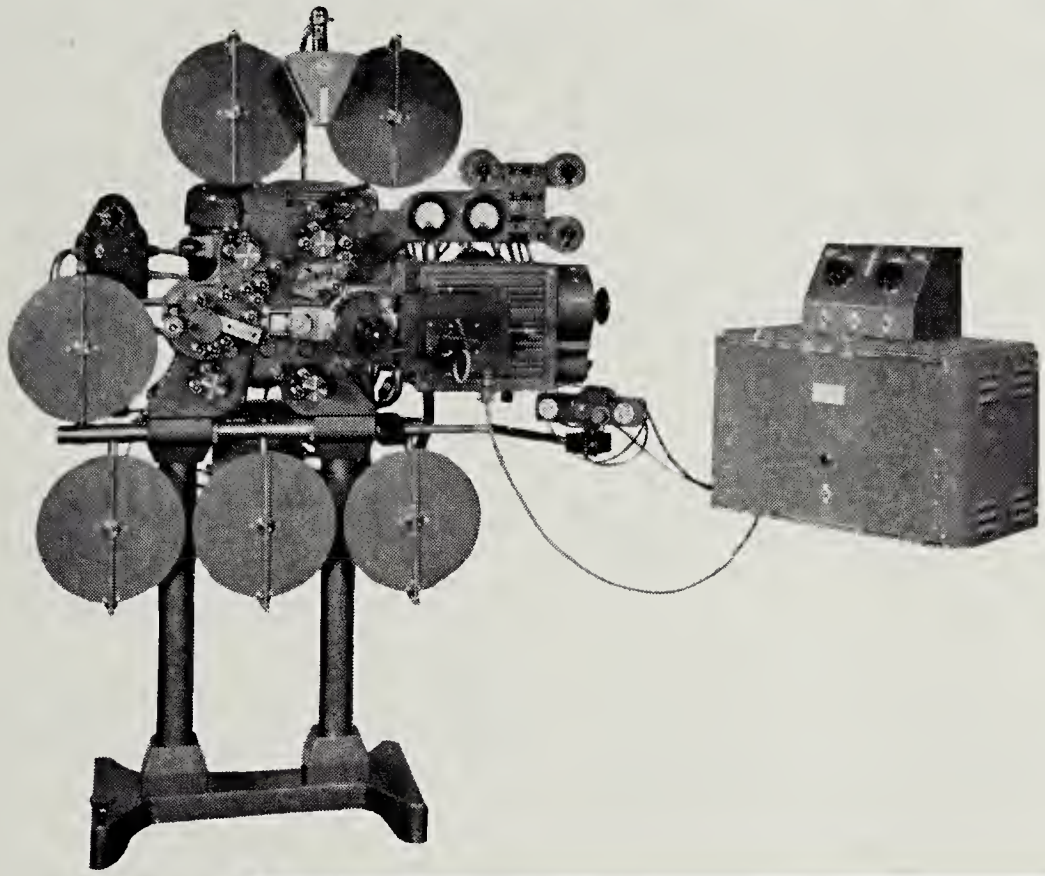
A bit of preliminary work will save many hours of cutting and splicing. When the films are returned from processing, make a list of each different scene or sequence, particularly noting changes in mood. This may be simply a random list with the first scene numbered 1, and the succeeding scenes numbered in sequence, with a brief description of each.

Study this list carefully and mentally re-arrange the scenes to form a logical sequence, keeping in mind the underlying theme decided upon for the completed story. It is usually possible to accomplish the major editing on paper before making a single cut or splice in the film. During this process, carefully retain the original numbers assigned to each sequence. After the sequences are in order and the story seems to flow smoothly and logically, the film is cut and spliced accordingly. At this point a new list is made up as in the beginning, but with new numbers assigned to each scene, sequence or mood in the new order, and the running time of each of these sub-divisions is determined. During the timing process, the speed of the projector is controlled by the power line frequency to assure accuracy.

Appropriate background music is now selected for each mood. If several scenes or sequences portray the same mood, it may be possible to cover them with one musical selection. The music is timed to determine whether or not the selection is of sufficient duration to cover the action. If not, then two selections of comparable moods may be used.

As the music is selected, cue points are noted. These points are in pairs, the first for starting the turntable, and the second for fading from the selection already playing to the selection to be played. If sound effects records are used, they should be cued at appropriate

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places in the same manner.

After the background has been completed, the film is once more run through, and the dialogue is set up in a similar manner, or the dialogue may be set up at the same time as the background. The final cue sheet should combine both the dialogue and the background changes, listed in their proper order.

The cue strips used with the records are marked as the background is set up, and are numbered sequentially. The records are correspondingly numbered, using pressure sensitive labels. These numbers are also shown on the cue sheets. The cue strips should be identified with the title of the film and sequence number, and will bear a register mark for locating the pickup arm. The records and cue strips will be stacked together so that the cue strip will always be on top of its associated record as the records are used from the pile.

As previously indicated, the finished cue sheet will include a sequence number corresponding to the record and cue strip number, the cue for starting the record and the cue for the change in music. It will also include the dialogue. For instance, a typical cue sheet might read as follows:

6. *Dagger Dance.*
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(Continued on Page 262)

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Photographic Assignments

MARCH • 1956

Who, where and what the industry's cameramen were shooting last month.

ALLIED ARTISTS

• Ellsworth Fredricks, ASC, "The Young Guns," with Russ Tamblyn and Gloria Talbot. Albert Band, director.

• Ernest Haller, ASC, "The Intruder," with Edmund Purdom, Ida Lupino, Ann Harding and Jacques Bergerac. Irving Rapper, director.

AMERICAN NATIONAL

• Brydon Baker, "Scandal, Inc." (Bonanza Prods.) with Robert Hutton and Patricia Wright. Edward Mann, director.

• Floyd Crosby, ASC, "TV Readers' Digest," TV. Various directors.

• Charles Van Enger, ASC, "Big Town," TV, (Mark Stevens TV Co.) with Mark Stevens, Barry Kelley, and Doe Avedon. Mark Stevens, director.

• Curt Fetters, "Science Fiction," TV (Ziv-TV). William Castle, director.

• Bob Hoffman, "Highway Patrol," TV, (Ziv-TV) with Broderick Crawford. Lew Landers, director.

• William A. Sickner, ASC, "Medic," TV, (Medic TV Prods.) with James E. Moser, Frank La Tourette, and Virginia Martindale. James E. Moser, director.

CALIFORNIA STUDIOS

• Sam Leavitt, ASC, "Hot Rod Girl," (Macirema Prod.) with Lori Nelson. Leslie Martinson, director.

• Fleet Southcott, "Gunsmoke," TV, (Filmaster Prods. Inc.) with James Arness and Dennis Weaver. C. Marquis Warren, director.

BILTMORE STUDIOS (New York)

• J. Burgi Contner, ASC, "The Goldbergs," TV, (Guild Films) with Gertrude Berg, Robert Harris and Eli Mintz. Marc Daniels, director; "I Spy," TV, (Guild Films) with Raymond Massey. William Berke, director.

COLUMBIA

• Gert Andersen, ASC, Ford Theatre, TV, with Robert Horton and Arthur Franz. Sidney Miller, director.

• Henry Freulich, ASC, "Reprisal," (Technicolor with Guy Madison, Felicia Farr and Kathryn Grant. George Sherman, director.

• Burnett Guffey, ASC, "Night Fall," with Aldo Ray and Anne Bancroft. Jacques Tourneur, director.

• Fred Jackman, Jr., "Rin-Tin-Tin," TV, (Screen Gems) with Lee Aaker, and James Brown. Robert Walker, director.

• Ben Kline, ASC, "Shakedown on Biscayne Drive," with Lee J. Cobb, Edward Arnold and Patricia Medina. Fred F. Sears, director.

• Irving Lipman, "Celebrity Playhouse," TV (Screen Gems.) James Nilsen, director.

• Frederick Young, ASC, "Beyond Mombama," (Technicolor & CinemaScope) (Todon Prods.) (shooting in Africa) with Cornel Wilde and Donna Reed. George Marshall, director.

WALT DISNEY

• Charles Boyle, ASC, "Westward Ho, the Wagons," (CinemaScope & Technicolor) with Fess Parker, and Kathleen Crowley. William Beaudine, director.

FILMCRAFT STUDIOS

• Virgil Miller, ASC, "You Bet Your Life," TV, (Filmcraft Prods.) with Groucho Marx. Robert Dwan and Bernie Smith, directors.

FLYING A

• Bill Bradford, ASC, "Buffalo Bill, Jr.," TV, with Dickey Jones and Pappy Cheshire. George Archinbaud and Frank MacDonald, directors; "Annie Oakley," TV, with Gale Davis. George Archibaud and Frank MacDonald, directors.

FOX WESTERN AVENUE STUDIOS

• Karl Struss, ASC, "My Friend Flicka," TV, with Gene Evans and Anita Louise. Robert Gordon, director.

• Lloyd Ahern, ASC, "20th-Fox Hour," TV. Robert Stevenson, director.

• Ed Dupar, ASC, "20th-Fox Hour," TV. Jules Bricken, director.

GENERAL SERVICE STUDIOS

• Hal Mohr, ASC, B. F. Goodrich commercial, TV.

• Robert Pittack, ASC, "Private Secretary," TV, (Chertok TV, Inc.) with Ann Southern, Don Porter and Ann Tyrrell. Oscar Rudolph, director.

• Philip Tannura, ASC, "Burns & Allen Show," TV, (McCadden Prods.) with Gracie Allen and George Burns. Frederick deCordova, producer-director; Carnation & B. F. Goodrich commercials, TV. Frederick deCordova, director.

• Harry Wild, ASC, "Bob Cummings Show," TV, (Laurmac Prods.) with Bob Cummings and Rosemary DeCamp. Rod Amateau, director; Winston commercials, TV. Rod Amateau, director.

• James Van Trees, ASC, "The People's Choice," TV, (Norden Prods.) with Jackie Cooper and Pat Breslin. Robert S. Finkel, director.

• Neal Beckner, "The Adventures of Ozzie and Harriet," TV, (Stage 5 Prods.) with Ozzie, Harriet, David and Ricky Nelson. Ozzie Nelson, director.

• Lester White, ASC, "Navy Log," TV, (CBS). Various actors. John Yarbrough, director.

GOLDWYN STUDIOS

• William Clothier, "Gun The Man Down," (Morrison-McLaglen for U. A. release) with James Arness, Angie Dickinson and Robert Wilke. Andrew V. McLaglen, director.

• Lee Garmes, ASC, "The Sharkfighters." (CinemaScope & Color) (Samuel Goldwyn Jr. Prods. UA release) (Shooting in Cuba) with Victor Mature and Karen Steele. Jerry Hopper, director.

• William Whitley, ASC, "Crossroads," TV, (Federal TV, Inc.) with Rod Cameron, Ralph Murphy and other directors.

• Ray Foster, ASC, "The Birth of a Song," TV, (Hamblen Prods.) with Stuart, Suzy, Veeva and Obee Hamblen. Russell Vincent, director.

• George Clemens, ASC, "Schlitz Playhouse of Stars," TV, (Meridian Prods.). Jim Sheldon, director.

• Ellis W. Carter, ASC, "Flight to Hong Kong," (Sabre Prods. U.A. release) with Rory Calhoun and Dolores Donlon. Joseph Newman, director.

INDEPENDENTS

• Stanley Cortez, ASC, "The Lonely Gun," (Robt. L. Jacks Prod. for UA release) with Anthony Quinn and Katy Jurado. Harry Horner, director.

• William Margulies, "Hot Cars," (Bel-Air Prods. for UA release) with John Bromfield and Joi Lansing. Donald McDougall, director.

• Clark Ramsey, ASC, "The Killer and 21 Men" (Eastmancolor & Widescreen) (R-G Prods.) with Anthony Dexter, Sonny Tufts and Marie Windsor. Oliver Drake, director.

• C. M. Pennington Richards, "Tarzan and the Lost Safari," (Color) (Sol Lesser Prods. —shooting in England) with Gordon Scott and Peter Arne. Bruce Humberstone, director.

• Guy Roe, ASC, "Gangbusters," TV, (Visual Drama, Inc.) Bill Kern, director.

KEY WEST STUDIOS

• Walter Strenge, ASC, Series of religious pictures, TV. William Claxton, director.

KLING STUDIOS

• Carl Berger, ASC, "Death Valley Days," TV (McGowan Prods). Stuart McGowan, director.

• Ray Fernstrom, ASC, Van Kamps White Star Tuna commercials, TV. Hank Ludwin, director.

KTTV STUDIOS

• Kenneth Peach, ASC, "Blood Brothers," (Grand Prods.) with Buster Crabbe, Neville Brand and Ann Robinson. Sidney Salkow, director.

• Mack Stengler, ASC, "Liberace," TV (Guild Films Inc.) with Liberace. Duke Goldstone, director; "It's Fun to Reduce," TV (Guild Films, Inc.) with Margaret Frith. Bruce Bilson, director.

METRO-GOLDWYN-MAYER

• Paul Vogel, ASC, "High Society," (VistaVision & Technicolor) with Bing Crosby, Grace Kelly and Frank Sinatra. Charles Walters, director.

● Joseph Ruttenberg, ASC, "Somebody Up There Likes Me," (Wide-Screen) with Paul Newman and Pier Angeli. Robert Weis, director.

● George Folsey, ASC, "Somewhere I'll Find Him," with James Cagney and Barbara Stanwyck. Roy Rowland, director.

● Fred Jackman, JR., "Julie," (Arwin Prods. for MGM release) with Doris Day, Louis Jourdan, Barry Sullivan and Frank Lovejoy. Andrew Stone, director.

● Robert Bronner, "The Opposite Sex," (CinemaScope & Color) with June Allyson and Jeff Richards. Dave Miller, director.

● Harold Marzorati, ASC, "MGM Parade," TV, with George Murphy and MGM contract players. George Murphy, director.

● Russell Harlan, ASC, "Teahouse of the August Moon," with Marlon Brando and Glenn Ford.

MOTION PICTURE CENTER

● Robert De Grasse, ASC, "Make Room for Daddy," TV, (Desilu Prod.) with Danny Thomas, Jean Hagen and Sherry Jackson. Sheldon Leonard, director.

● Karl Freund, ASC, "I Love Lucy," TV, (Desilu Prod.) with Lucille Ball and Desi Arnaz. James Kern, director; "Our Miss Brooks," TV, (Desilu Prod.) with Eve Arden. John Rich, director.

Sid Hickox, ASC, "December Bride," TV, (Desilu Prod.) with Spring Byington. Jerry Thorpe, director; TV pilot with Red Skelton (Desilu Prod.). C. Burns, director.

● Harold Wellman, ASC, "Wyatt Earp," TV, (Desilu Prod.) with Hugh O'Brian. Frank McDonald, director.

PARAMOUNT

● Charles Lang, ASC, "Gunfight at the O K Corral," (VistaVision & Technicolor) with Burt Lancaster, Kirk Douglas, John Ireland and Jo Van Fleet. John Sturges, director.

● Loyal Griggs, ASC, "The Maverick," (VistaVision & Technicolor) with Charlton Heston, Anne Baxter and Gilbert Roland. Rudy Mate, director.

REPUBLIC STUDIOS

● Herb Kirkpatrick, "The Crusader," TV, with Bryan Keith. John Lucas, director.

● Ed Colman, ASC, "Dragnet," TV, (Mark VII Prod.) with Jack Webb. Jack Webb, director.

● Bud Thackery, ASC, "Warrens of Arizona," (Wide-Screen; Trucolor) with Skip Homeier and Kristine Miller. Joe Kane, director; The Ray Milland Show, TV (General Electric) with Ray Milland. Ray Milland, director; "Studio 57," TV with Pat O'Brien. Jerry Mayer, director.

● John MacBurnie, ASC, "The Millionaire," TV with John Larch. Sobey Martin, director; "Jane Wyman Show" TV, with Jane Wyman. Sidney Lanfield, director.

● Reggie Lanning, "Alfred Hitchcock Presents," TV, with Phil Abbott. Robert Stevensen, director.

● Dan Clark, ASC, "Do You Trust Your Wife," TV, (Don Monya Co.) with Edgar Bergen. Jim Morgan, director.

RKO

● Joseph Biroc, ASC, "Tension at Table Rock," with Richard Egan, Dorothy Malone and Cameron Mitchell. Charles Marquis Warren, director.

● George Diskant, ASC, "Stage Seven, Hall of Stars," TV, (Four Star Prods.).

● William Mellor, ASC, "Back From Eternity," with Robert Ryan and Anita Ekberg. John Farrow, producer-director.

● William Snyder, ASC, "Beyond a Reasonable Doubt," with Dana Andrews and Joan Fontaine. Fritz Lang, director.

HAL ROACH STUDIOS

● Lucien Andriot, ASC, "The Life of Riley," TV, with William Bendix. Abby Berlin, director; "It's A Great Life," TV, Michael O'Shea, William Bishop and James Dunn. Chris Nyby, director.

● Lothrop Worth, ASC, "The Great Gildersleeve," TV, with Willard Waterman. Charles Barton, director.

● Paul Ivano, "Stories of John Nesbitt," TV, with John Nesbitt. Various directors.

● Jack Mackenzie, ASC, "Code 3," TV. Ted Post and Paul Landers, directors; "Frontier," TV (Tomoda Prod.). Various directors.

SKINNER STUDIOS

● Gilbert Warrenton, ASC, "Sergeant Preston of the Yukon," TV, with Richard Simmons. Various directors.

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● Ray Fernstrom, ASC, Gem Razor commercial, TV (5 Star Prods.) Chet Glassley, director.

● Fred West, ASC, "Girls in Prison," (Golden State Prod.) with Richard Denning and Joan Taylor. Edward L. Cahn, director.

20TH CENTURY FOX

● Milton Krasner, ASC, "Bus Stop," (CinemaScope & Color) with Marilyn Monroe, Don Murray and Arthur O'Connell. Joshua Logan, director.

● Leo Tover, ASC. "The Day the Century Ended," (CinemaScope & Color) with Robert Wagner. Richard Fleischer, director.

● Joe MacDonald, ASC, "One in a Million," (Cinemascope & Technicolor) with James Mason. Nick Ray, director.

● Wilfrid Cline, ASC "Last Wagon," (CinemaScope & Techincolor) with Richard Widmark. Delmar Davies, director.

UNIVERSAL - INTERNATIONAL

● William Daniels, ASC, "Istanbul," (Color) with Cornel Borchers and Errol Flynn. Joe Pevney, director.

● Maury Gertsman, ASC, "Kelly and Me," (CinemaScope & Technicolor) with Van Johnson, Piper Laurie and Martha Hyer. Robert Z. Leonard, director.

● George Robinson, ASC, "Francis in the Haunted House," with Mickey Rooney and Virginia Wells. Will Cowan, director.

● Wilfred Cline, ASC, "Pepsi Cola commercial, TV. Will Cowen, director.

● Harold Lipstein, ASC, Marlboro, General Electric, DuMont, and Rinso TV commercials.

● Irving Glassberg, ASC, Campbell's Soup, Falstaff beer TV commercials.

● Scotty Welborn, Studebaker TV commercial.

● Russell Metty, ASC, "Battle Hymn," (CinemaScope) with Rock Hudson. Douglas Sirk, director.

WARNER BROS.

● Robert Burks, ASC, and Tom Tutwiler, ASC, "The Spirit of St. Louis," (Eastmancolor & CinemaScope) with James Stewart. Billy Wilder, director.

● Ted McCord, ASC, "The Burning Hills," (WarnerColor & CinemaScope) with Tab Hunter and Natalie Wood. Stuart Heisler, director.

● Hal Rosson, ASC, "Toward the Unknown," (Warner-Color & CinemaScope) (Toluca Prods.) with William Holden, Lloyd Nolan, and Virginia Leith. Mervyn LeRoy, director.

● Harold Stine, ASC, "Deep Freeze" (Warner Bros. Presents) TV, with John Jonshepodd, Gerald Mohr. Jack Gage, director.

● Carl Guthrie, ASC, "Cheyenne" TV, with Klint Wagner. Richard Barr, director.

● Floyd Crosby, ASC, "Old Man of the Sea" with Spencer Tracy. Fred Zimmerman, director.

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SOUND TRACKS FOR HOME MOVIES

(Continued from Page 259)

Start: As car passes.
Fade in: As hiking party appears.
Dialogue: "The hike to the Eagle Rock Fire Tower was one of the highlights of the outing."

7. *Wind sound effects.*
Start: Scene: Large boulder near trail.
Fade in: At lookout tower.
Dialogue: "The footing at the tower was made hazardous by the high wind and a sudden rain squall."

In the above examples, note that the dialogue, which replaces the written title of the silent film, is descriptive in nature rather than the "signboard" type. That is, instead of saying "This is the Eagle Rock hiking party" and "This is the storm at Eagle Rock Tower," each scene is complemented by a brief word description which identifies the group or the location in a manner completely incidental to the scene. This is an important point to remember in all title work. For instance, in a series of flower shots, it is far more pleasing to say "Wild roses grow in profusion along a stone ledge" than to say "These are wild roses."

Actual recording of the sound track will be simple or difficult, depending upon the elaborateness of the sound effects and the frequency of the required changes. The most complicated dialogue will usually be the introduction, after which the sound track will consist primarily of mood music and sound effects, with an occasional bit of dialogue to explain any action not completely clear in the picture, or to properly place the scene geographically.

After the film has been edited, the cues set up and the music, sound effects and dialogue have been arranged, the recording of the actual sound track may proceed.

A narrow strip of colored "Scotch" tape is applied to the film leader approximately one foot ahead of the beginning of the film, to act as a marker for starting the tape recorder.

The first two records are placed on the turntables and the playback arms moved to the proper grooves, as indicated by the register marks on the cue strips.

The projector is switched on, with the power line frequency controlling its speed. As the marker on the film leader passes over the film loop ahead of the film gate, the tape recorder and the first turntable are switched on. As soon as the turntable reaches its normal speed, usually one or two seconds after starting, the music is faded in. The operator watches the projection of the picture, and as each cue point is reached, he takes whatever action is indicated, such as fading from one record to another, from a record to the microphone for the recording of dialogue, etc.

With carefully arranged recordings and dialogue, there will be no simultaneous actions required on the part of the operator, and the recording may proceed smoothly and without incident. It is well to reduce the number of actions required of the operator to a minimum. For instance, if all recordings are of the same r.p.m. speed, the operator will be relieved of the task of remembering to change turntable speeds during the recording session.

With a little practice, it is possible to set up a very pleasing sound track with little difficulty, and the experienced operator may easily produce very professional results. They will be gratifying in any case, and even if background music alone is used without dialogue and sound effects, the satisfaction of having the changes in music precisely follow the changes in mood portrayed on the screen is ample reward for the extra effort involved in the production of a coincident sound track for your films.

CASHING IN ON 16MM FILMING

(Continued from Page 241)

in "Double-Decker Swan Song" (voice, courtesy Ray Morgan). When a garage attendant winds through the route scroll of a long-idle bus, the sad comment: "Ah, me. My last roll call, no doubt." Then, in the film's finale, as a review of landmarks along the bus' old route flash upon the screen: "Farewell, Washington Arch! I'd be honored to have you for my tombstone . . . Farewell, Empire State Building; don't streak your windows with tears over me . . . Farewell, Rockefeller Plaza; no flags at half-mast for me, please . . . Farewell, Saint Patrick's Cathedral. This seems like a good place to say . . . "Amen." Fade-out. The End.

Getting a different voice to convey the individual "personality" of each film's starring object presented quite a problem until I found Gilbert Mack, a clever radio-TV actor who can give with most any kind of voice. Gil's been many things for me to date, from trolley car to ferris wheel. "Edutainment" is the word I've coined (and copyrighted) to identify the combined educational-entertaining quality I strive for in my films. I think my reason for adapting this style was to have a broader creative outlet. I find writing and editing the most

fascinating parts of movie-making.

On the basis of doing my own shooting, writing and editing, I once estimated that a short costs me about a thousand dollars; and that my share of TV royalties from it (The distributor gets from 30% to 50%) would total $3000 in five or six years. Disillusioned? I was, too. Then I got to thinking. Well, if each film clears $2000 eventually and I turn out five shorts each year, that's $10,000 a year, isn't it? For play, it's not bad pay. Of course, with a sponsor the earnings would be much bigger. But, to obtain such a blessing, I'd have to turn out a series of at least 26 units a year. That would be getting into big business which, to date, I've side-stepped.

But now Hollywood, home of the happy ending, comes along with a surprise twist that could mean tragedy to the bright little offerings that have been bobbing up from free-lancers like me. Almost every week one reads of another formerly-aloof studio concluding a deal permitting use by television of its backlog subjects, along with which go hundreds of shorts. My royalties have already shown an adverse trend.

I neither want to discourage nor encourage would-be producers. Personally, I think I'll take a breather, as soon as I finish a short about New York's waterfront, to see how far the tide turns. Already I seem to envisage encouragement on the blue horizon: Color TV. It could mean a boon to travel films. *New* travel films. Our fast-changing world will demand that they be new. Color travel shorts have always been popular at the movies, as evidenced by the applause, which is not usual in film houses. So, in the meantime, let's all of us ambitious 16mm cameramen keep our fingers crossed!

BYRON'S NEW LAB

(Continued from Page 243)

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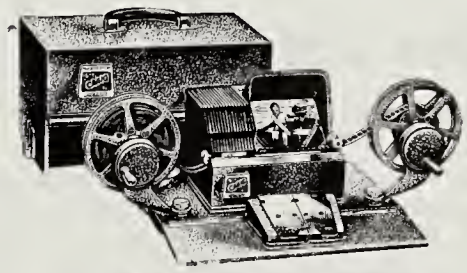
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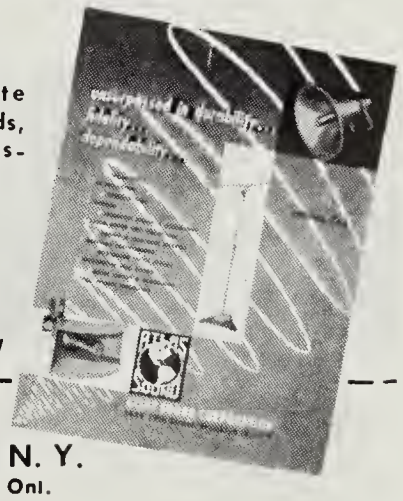
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1955 ACADEMY AWARDS

(Continued from Page 220)

Best score for musical: Robert Russell Bennett, Jay Blackton and Adolph Deutsch for "Oklahoma!" (Todd-AO, Magna Theatre Corp.).

Best score for dramatic picture: Alfred Newman for "Love Is a Many-Splendored Thing" (20th Century-Fox).

Best sound recording: Fred Hynes for "Oklahoma!" (Todd-AO, Magna Theatre Corp.).

Best costume design, color: Charles LeMaire for "Love Is a Many Splendored Thing" (20th Century-Fox).

Best costume design, black-and-white: Helen Rose for "I'll Cry Tomorrow" (MGM).

Best editing: Charles Nelson and William A. Lyon for "Picnic" (Columbia).

Best art direction, color: William Flannery and Jo Mielziner for "Picnic" (Columbia).

Best art direction, black-and-white: Hal Pereira and Tambi Larsen for "The Rose Tattoo" (Hal Wallis-Paramount).

The selection of eligible films to be nominated for the Academy's annual awards for photographic achievement begins with the cinematographers themselves. The first of January, each year, each director of photography in the Hollywood motion picture industry is invited to submit for consideration the name of one black-and-white and one color feature production on which he has received sole or joint credit. Titles of these films are then included in a preliminary ballot which is then sent to all directors of photography in the industry.

In addition to the two pictures of his own filming which he may nominate, each director of photography at his own discretion may also nominate one eligible black-and-white and one color foreign-made production which he considers worthy of the Academy's consideration. Thus, major foreign-made films have a chance to compete with Hollywood productions for the photographic achievement awards. (This year, although several foreign films were listed on the preliminary ballot, none survived in the voting to become contenders for Oscars.)

Subsequent balloting reduces the list of films to ten in each category (black-and-white and color), and a second balloting names the five in each class which shall be subject to a final vote by the entire Academy membership to determine the one best photographic achievement in each class. All directors of photography in the Hollywood studios, whether members of the Academy or not, are eligible to vote in the preliminary balloting and the nominations voting. Only Academy members, however—and many Hollywood directors of photography are also members of the Academy—participate in the final voting that decides the Oscar winners.

ROSTER OF "OSCAR" WINNERS FOR CINEMATOGRAPHY 1928 to 1955

Year	*Class.*	*Cameraman*	*Picture Title*	*Studio*
1955	B&W	James Wong Howe, A.S.C.	"The Rose Tattoo"	Para.
1955	Color	Robert Burks, A.S.C.	"To Catch A Thief"	Para.
1954	B&W	Boris Kaufman, A.S.C.	"On the Waterfront"	Col.
1954	Color	Milton Krasner, A.S.C.	"Three Coins in the Fountain"	Fox
1953	B&W	Burnett Guffey, A.S.C.	"From Here To Eternity"	Col.
1953	Color	Loyal Griggs, A.S.C.	"Shane"	Para.
1952	B&W	Robert Surtees, A.S.C.	"The Bad and the Beautiful"	MGM
	Color	Winton Hoch, A.S.C. Archie Stout, A.S.C.	"The Quiet Man"	Argosy
1951	B&W	William Mellor, A.S.C.	"A Place In The Sun"	Para.
	Color	Alfred Gilks, A.S.C. John Alton, A.S.C.	"American In Paris"	MGM
1950	B&W	Robert Krasker	"The Third Man"	British
	Color	Robert Surtees, A.S.C.	"King Solomon's Mines"	MGM
1949	B&W	Paul Vogel, A.S.C.	"Battleground"	MGM
	Color	Winton Hoch, A.S.C.	"She Wore Yellow Ribbon"	R.K.O.
1948	B&W	William Daniels, A.S.C.	"The Naked City"	U-I
	Color	Joseph Valentine, A.S.C. William V. Skall, A.S.C. Winton Hoch, A.S.C.	"Joan Of Arc"	R.K.O.
1947	B&W	Guy Green	"Great Expectations"	Rank-U-I
	Color	Jack Cardiff, A.S.C.	"Black Narcissus"	Rank-U-I

(Continued on Page 266)

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B & H 12V or 24V EYEMO & FILMO MOTORS. New. Value $142.00 95.00
MOLE RICHARDSON 2000 Spot, rolling stand 110.00
ENLARGERS, EXCELLENT CONDITION, ELWOOD. Auto focus, lens and stand. Size 5x7 235.00
Size Bx10 350.00
SPECIALIZING IN MOVIE AND TELEVISION SUPPLIES, TRIPODS, SYNCHRONIZERS, 16mm SOUND CAMERAS lights, lenses, mikes, booms, dollies, motors, etc. New—Used. Reasonable prices. Cash for used equipment. Trades taken.

HOLLYWOOD CAMERA EXCHANGE, LTD.
1600 CAHUENGA BOULEVARD, HOLLYWOOD 28, CAL.

STUDIO & PRODN. EQUIP.

BELL & HOWELL EYEMO & FILMO OWNERS! Are you shooting for television? Our TV area matte is a must in your objective optical viewfinder. It eliminates chopped heads, feet, etc. For details and price, write to DON IWERKS, Box 151, Pacoima, Calif.

PRECISION Magnetic Heads for Engineers - Industry
Erase - Record - Playback
STANCIL-HOFFMAN CORPORATION
921 North Highland Avenue
Hollywood 38, California

BASS . . .is headquarters for Arriflex 16; the new Zoomer 16; Cine Specials all models; Bell & Howell 70-DR; Bolex H-16; Used 16mm. Eastman Sound Kodascope Model FB-40, 750 watt, 1600 ft. film cap., two 12" speakers, $250.00; Used 16mm. B.&H. Utility 13BX, 750 watt, 2" F:1.65 lens, 12" speaker, complete in 2 cases, $165.00; Used 16mm. Ampro. Compact sound proj., sound and silent speeds, 2" F:1.B5 lens, 1600 ft. film; Used 16mm. Ampro Premier 10 sound prop., sound and silent speeds, F:2.16 proj. lens, 750 watt, 2000 ft. film cap., 12" speaker, complete in two cases, $250.00. Best buys . . . Best trades always. BASS CAMERA CO., Dept. A.C., 179 W. Madison St., Chicago 2, Ill.

CINE SPECIAL 11 WITH 100 FT. CHAMBER
Cine Special 11 F:1.4 Ektar used for 5000 feet of film recently sent to Eastman for checkup, never used since. Can supply test strips taken at factory: $B20.00. 100 foot chamber for Cine-Special perfect, $125.00; 200 foot chambers for Cine-Special, perfect, $195.00. DAN OXMAN PHOTO SUPPLIES, 424 W. Olney Ave., Philadelphia 20, Penna.

ALL absolutely new condition, used once: 70DL, f/1.9, spider turret, $300; 70DL rackover, $1B; 9" f/3.B Century lens, $76; 6" f/4.5 Wollensak lens, $64. Lenses C mount, with filter adapters. R. SHAININ, 430 Windermere, Buffalo 23, N.Y.

ARRIFLEX 16, complete with Schneider lenses 11,6/1,9, 25/1,5, 75/2, case, battery, etc. Brand new. Make offer. H. WIBMER, 512 Lakeside 50, Seattle, Wash.

ANAMORPHIC Bell & Howell CinemaScope lens: Universal bracket; absolutely perfect, $350.00. DAVIS, 220B So. Kedvale, Chicago, Ill.

CINE SPECIAL II, 25mm Ektar lens, 100-foot and 200-foot film chambers, carrying case. Camera has seen less than 2000 feet of film—is same as new. $975.00. VICTOR DUNCAN, 4B2B Oleatha Ave., St. Louis 16, Mo.

SCREEN TEST FILMS

16MM. COLOR, SINGLE-SYSTEM SOUND FILMS
STUDIO SHOTS MADE FOR SCREEN-TEST, AUDITION, NARRATION OR OTHER USES, PRICE—$50.00 PER 100 FEET. GOOD QUALITY, QUICK SERVICE, NO OTHER CHARGES!
RALPH MARKS SOUND STUDIOS
344 EAST 49 STREET, NEW YORK 17, N.Y.
PHONE PL 5-1625

WANTED

WE HAVE CUSTOMERS GALORE FOR
Cameras, Dollies, Lenses, Lights, Moviolas, Printers, Recorders, Studio or Laboratory Equipment.
WE ALSO TRADE OF TAKE CONSIGNMENTS. SET YOUR OWN PRICE—WE'LL GET IT.
Western Union-WUX New York, Phone PL 7-0440
S.O.S. CINEMA SUPPLY CORPORATION
Dept. fc **Cable: SOSOUND**
602 W. 52nd Street **New York 19, N. Y.**
Western Branch—6331 Hollywood Blvd. Hollywood, Calif., Phone HO 7-9202

CINE SPECIAL II with 100' film chamber and extra 100' chamber; Kodak Anastigmat f/2.7 63mm lens, S mount; Cine Kodak lens spacer rings; Professional Junior tripod; set of Cine Special front finders. Used equipment preferred. R. SHAININ, 430 Windermere, Buffalo 23, N.Y.

(Continued on Next Page)

Classified Ads

(Continued from Preceding Page)

WANTED

WANTED FOR SPOT CASH
Used Mitchells, Auricons—other Cameras
Moviolas—Editing Equipment—Projectors
Spotlights—Sound Equipment

All Types Used Equipment
From a Splicer to a Complete Studio

Write—Wire—Phone
or Send Equipment in for Spot Cash

FLORMAN & BABB **Murray Hill 2-2928**
68 West 45th Street **New York 36, New York**

WANTED

PRODUCTION EQUIPMENT, LABORATORY EQUIPMENT, EDITING EQUIPMENT, 16mm. and 35mm. FROM SINGLE ITEMS TO COMPLETE STUDIOS. TRADES ACCEPTED.

THE CAMERA MART, INC.
1845 Broadway Circle 6-0930 New York 23, N.Y

WANTED

Mitchell — Akeley — B & H — Wall — Eyemo
Cameras — Lenses — Equipment
NATIONAL CINE EQUIPMENT, INC.
209 West 48th St. **New York, N.Y.**

POSITIONS WANTED

NEGRO—Catholic, experienced cameraman, 35mm newsreel, 16mm color productions, editing, lighting, titling, also projectionist. MALCOLM MYERS, 3424 Clark Ave., St. Louis 3, Missouri.

SALESMAN or partner to sell unusual TV commercial that fits any product. EARL TETTLETON, 2716 Alabama St., La Crescenta, Calif.

ASSIGNMENTS WANTED

U.S. ASSIGNMENTS. 16mm silent. Experienced cameraman for Industrial, Construction, Mine and Mill, Logging, Agricultural, Legal, Scenic, Oddities and Travel subjects. ORVILLE SNIDER, P.O. Box 32, North Hollywood, Calif. SUnset 2-5256.

LABORATORY & SOUND

ROCKY MOUNTAIN 16MM HEADQUARTERS
Processing — Printing — Recording
Editing — Production — Rental — Sales
DuPont, Eastman and Fastax films in stock.
Write for Price List.
WESTERN CINE SERVICE, INC.
114 E. 8th Ave., Denver 3, Colo. TAbor 5-2812

SOUND RECORDING at a reasonable cost. High Fidelity 16 or 35. Quality guaranteed. Complete studio and laboratory services. Color printing and lacquer coating. ESCAR MOTION PICTURE SERVICE, INC., 7315 Carnegie Avenue, Cleveland 3, Ohio. Phone Endicott 1-2707.

16mm SOUND and picture editing—sound recording—music—effects. DON DUNN'S EL RANCHO AUDIO, near Palos Verdes and L.A. Harbor. 26246 Fairview Avenue, Lomita, Calif. DAvenport 6-4925.

FOR RENT

FULLY equipped sound stage. 3 cameras including new NC Mitchell. Available for rent by day or week. Assignments accepted. LARRIBOB PRODUCTIONS, INC., 5383 North Union Blvd., St. Louis 15, Missouri.

To Classified Advertisers

Copy deadline for classified advertising is the 15th of month preceding publication date. Mail copy and remittance to cover cost to

AMERICAN CINEMATOGRAPHER
1782 No. Orange Dr.
Hollywood 28, Calif.

ROSTER OF "OSCAR" WINNERS FOR CINEMATOGRAPHY

(Continued from Page 264)

Year	*Class.*	*Cameraman*	*Picture Title*	*Studio*
1946	B&W	Arthur Miller, A.S.C.	"Anna And King Of Siam"	Fox
	Color	Charles Rosher, A.S.C. Leonard Smith, A.S.C. Arthur Arling, A.S.C.	"The Yearling"	MGM
1945	B&W	Harry Stradling, A.S.C.	"Picture Of Dorian Gray"	MGM
	Color	Leon Shamroy, A.S.C.	"Leave Her To Heaven"	Fox
1944	B&W	Joseph LaShelle, A.S.C.	"Laura"	Fox
	Color	Leon Shamroy, A.S.C.	"Wilson"	Fox
1943	B&W	Arthur Miller, A.S.C.	"Song Of Bernadette"	Fox
	Color	Hal Mohr, A.S.C. W. Howard Greene	"Phantom Of The Opera"	Univ.
1942	B&W	Joseph Ruttenberg, A.S.C.	"Mrs. Miniver"	MGM
	Color	Leon Shamroy, A.S.C.	"The Black Swan"	Fox
1941	B&W	Arthur Miller, A.S.C.	"How Green My Valley"	Fox
	Color	Ernest Palmer, A.S.C. Ray Rennahan, A.S.C.	"Blood And Sand"	Fox
1940	B&W	George Barnes, A.S.C.	"Rebecca"	Selznick
	Color	George Perrinal	"Thief Of Bagdad"	Korda
1939	B&W	Gregg Toland, A.S.C.	"Wuthering Heights"	Goldwyn
	Color	Ernest Haller, A.S.C. Ray Rennahan, A.S.C.	"Gone With The Wind"	Selznick-MGM
1938		Joseph Ruttenberg, A.S.C.	"The Great Waltz"	MGM
1937		Karl Freund, A.S.C.	"The Good Earth"	MGM
1936		Tony Gaudio, A.S.C.	"Anthony Adverse"	WB
1935		Hal Mohr, A.S.C.	"Midsummer Night's Dream"	WB
1934		Victor Milner, A.S.C.	"Cleopatra"	Para.
1933		Charles B. Lang Jr., A.S.C.	"A Farewell To Arms"	Para.
1932		Lee Garmes, A.S.C.	"Shanghai Express"	Para.
1931		Floyd Crosby, A.S.C.	"Tabu"	Para.
1930		William Van Der Veer Joseph T. Rucker	"With Byrd At So. Pole"	Para.
1929		Clyde DeVinna, A.S.C.	"White Shadows In So. Seas"	MGM
1928		Charles Rosher, A.S.C. Karl Struss, A.S.C.	"Sunrise"	Fox

INDUSTRY NEWS

(Continued from Page 210)

Riley Upped at Technicolor

Robert Riley, vice president in charge of Technicolor Hollywood sales, has been elected a member of the Board of Directors of Technicolor Motion Picture Corporation at its annual shareholders meeting. Dr. Herbert T. Kalmus, President and General Manager of Technicolor, officially announced Riley's election April 3rd.

Riley, a native of Massachusetts, joined the Technicolor company in 1922 when its headquarters were in Boston. He started as an operator in the laboratory and through the years has worked his way up through a number of supervisory and executive positions to be elected as vice president of Technicolor Motion Picture Corporation in 1953. At present he is head of the Technicolor sales organization in Hollywood and Director of Studio Operations. Within Mr. Riley's department fall camera and color consultant activities in Hollywood, domestic sales activities in New York, and the Technicolor exhibitor and distributor field service program. He is an associate Member of the American Society of Cinematographers.

WHAT'S NEW

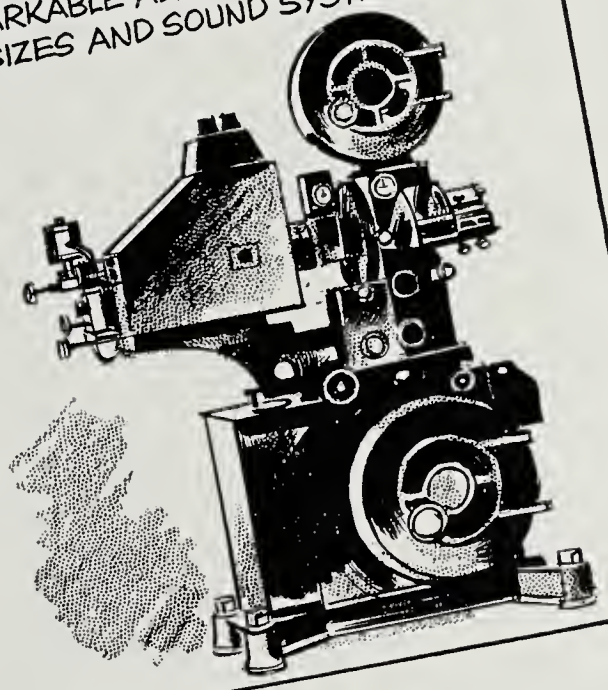
(Continued from Page 208)

which features single leg-tightening knobs; two-position offset pan-handle, adjustable to various lengths and to right or left hand use; improved camera screw tightening knob; tie-down eyelets; seasoned, solid hardwood legs; and friction head with positive pan and tilt locks.

SEEING IS BELIEVING!

AN EARLY EXPERIMENT,

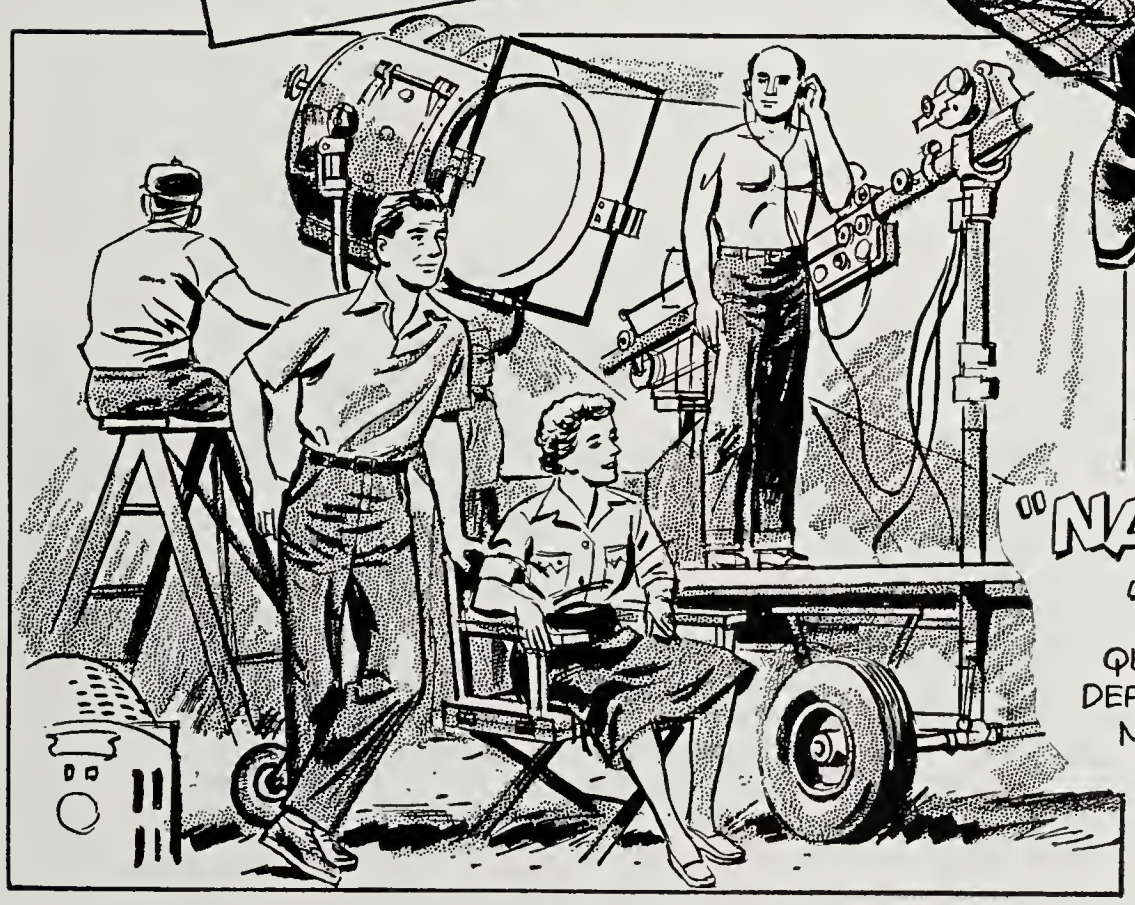
IN BETTERING BIG-PICTURE QUALITY WITH WIDE FILM...THOUGH PREMATURE AND SHORT-LIVED, THE **GRANDEUR PROCESS** OF THE '20'S OFFERED REMARKABLE ADAPTABILITY TO FILM SIZES AND SOUND SYSTEMS.



MODERN WIDE-FILM SYSTEMS

ACHIEVE THE GREATLY IMPROVED PICTURE QUALITY NEEDED FOR NEW, GIANT SCREENS. PROGRESS NEVER STOPS IN THE FILM INDUSTRY...





"NATIONAL" CARBONS, TOO,

HELP TO GET HIGHER QUALITY <u>ON</u> THE FILM—PROVIDING DEFINITION, COVERAGE AND UNIT OUTPUT NOT OBTAINABLE WITH ANY OTHER METHOD OF STUDIO LIGHTING.

THE "NATIONAL" CARBON ARC... NOTHING BRIGHTER UNDER THE SUN



The term "Nationol" is o registered trade-mark of Union Carbide and Carbon Corporotion

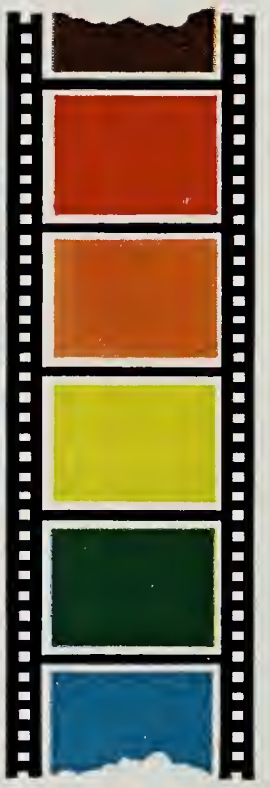
NATIONAL CARBON COMPANY

A Division of Union Carbide and Carbon Corporation, *30 East 42nd Street, New York 17, New York*

Sales Offices: Atlanta, Chicago, Dallas, Kansas City, Las Angeles, New York, Pittsburgh, San Francisco

IN CANADA: Union Carbide Canada Limited, Toranto

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color process

using EK 35mm and 16mm negative

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PRACTICALLY EVERY 16MM FILM PRODUCER IN THE WESTERN HEMISPHERE IS A CLIENT OF BYRON

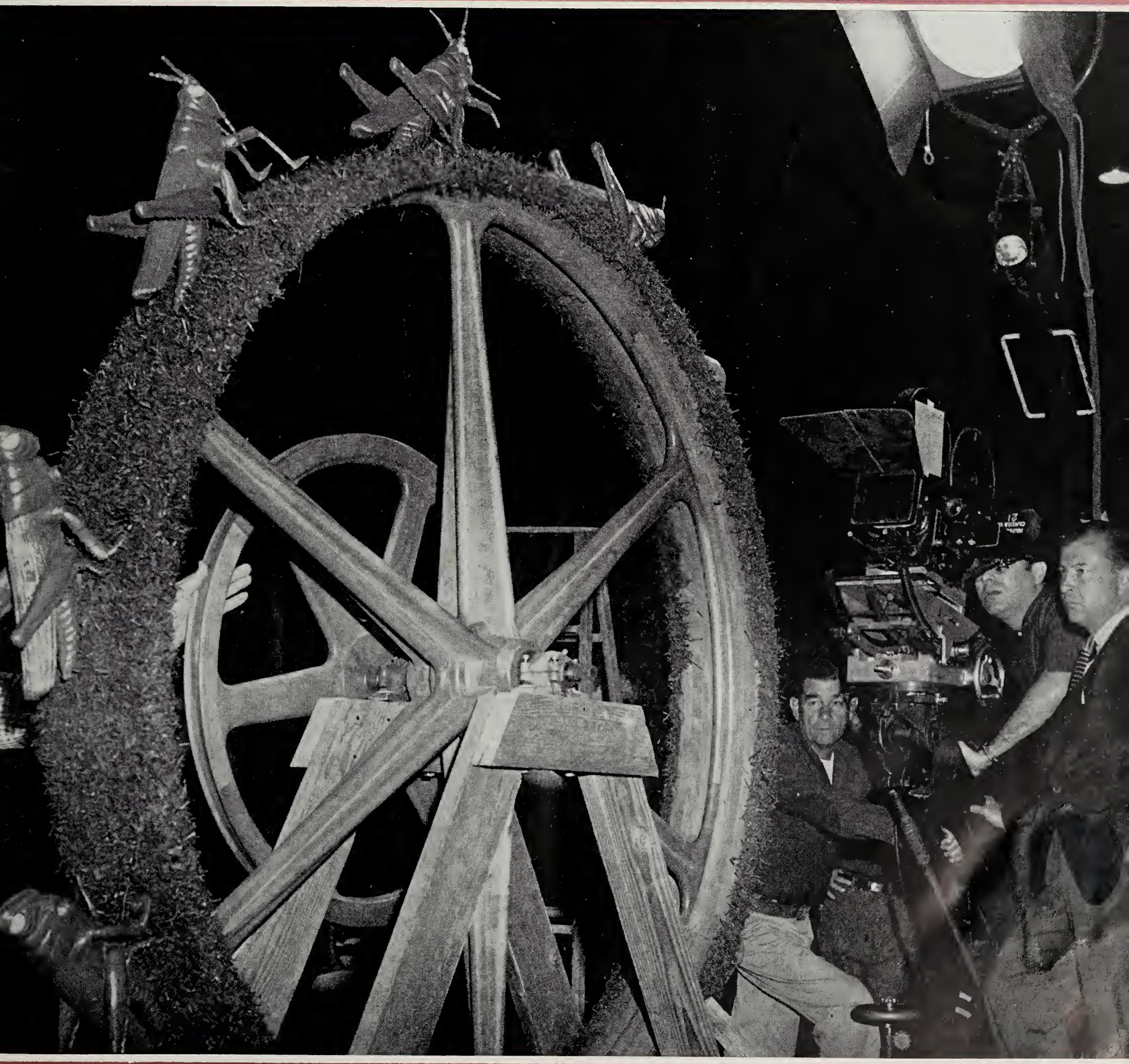
LEONARD CLAIRMONT
4530 MARIOTA AVENUE
NORTH HOLLYWOOD, CALIF.

AMERICAN

MAY • 1956

Cinematographer

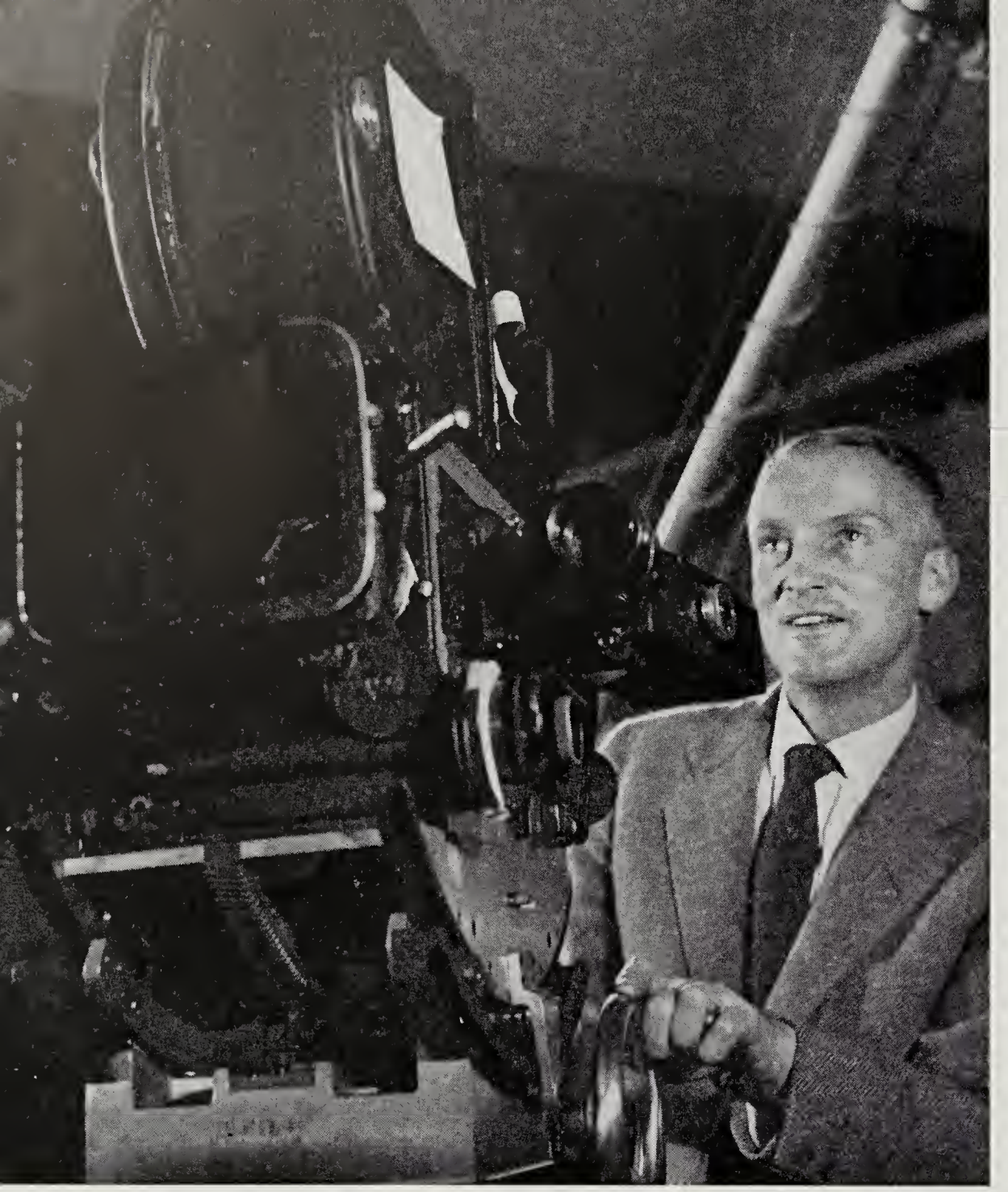
THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



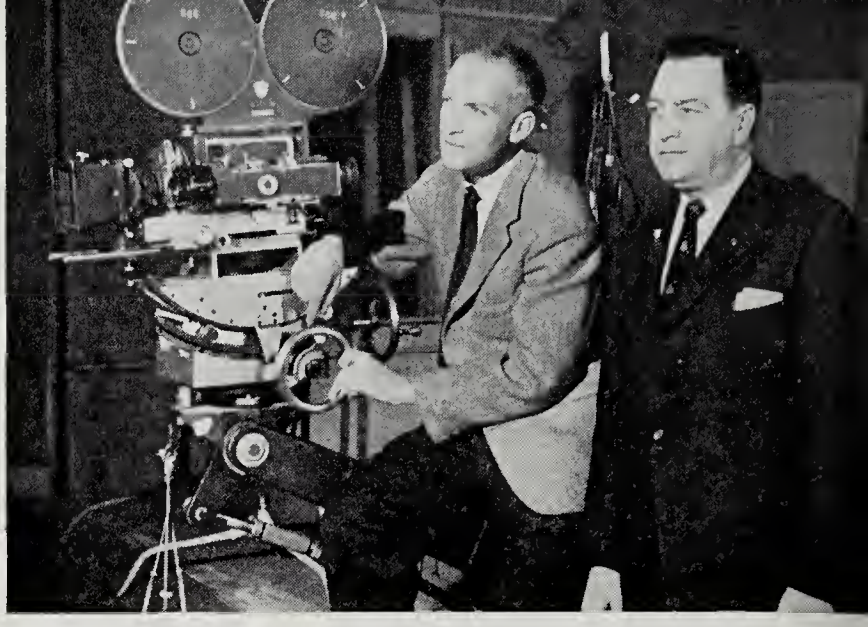
In This Issue . . .

- Mobile Camera Shots for "The Fastest Gun Alive"
- Plastic Blimps For Shooting Movies Under Water
- Wide Angle Problems in Wide Screen Photography

25c
FOREIGN 35c



Drummond Drury, Director of Photography shooting at Video Pictures, Inc., is primarily concerned with filming top-product TV commercials. He says, "We're interested in getting highest possible quality . . . and Du Pont 'Superior' 2 gives better images than any other black-and-white film we've ever used."



Du Pont Representative Joe Dougherty (right) is a frequent visitor at Video Pictures, Inc. He discusses technical aspects of using Du Pont Film with Mr. Drury.



Filming an automobile TV commercial requires top performance at every point. The long scale of Du Pont "Superior" 2 captures details in highlights and opens up shadows for best footage obtainable.

"Long scale, speed, fine grain...features that make Du Pont 'Superior' 2 ideal for TV filming!"

—reports **VIDEO PICTURES, INC.,** *one of New York's oldest producers*

"When shooting TV commercials, Video Pictures demands the utmost from a film," says, Drummond Drury, Director of Photography. "Du Pont 'Superior' 2 gives us fine grain to catch detail, long gradation and wide latitude to capture middle tones and record the image properly.

"For example, shooting automobile commercials is a case where good middle tone register is extremely important. In addition, clean highlights and remarkable shadow detail obtained with 'Superior' 2 record the set just the way we want it.

"The emulsion of 'Superior' 2 Motion Picture Film is more rugged than any we have ever tested," adds Mr. Drury. "It's much less susceptible to scratches from shooting and processing operations. And, by controlled development, we can increase film speed without danger of enlarging the grain. 'Superior' 2 has proved to be a film we can depend on to show the client's product as he wants it shown!"

Video Pictures insists that the release prints go on Du Pont Type 824 Fine Grain Low Contrast Positive . . . this film gives the low contrast necessary for good TV reproduction. They use Du Pont 802 B Sound Recording stock for their sound recording to complement the fine results obtained on "Superior" 2 and Du Pont Type 824 Low Contrast Positive stock.

FOR MORE INFORMATION, write or call the nearest Du Pont Sales Office (listed below) or the Du Pont Company, Photo Products Department, Wilmington 98, Delaware. In Canada: Du Pont Company of Canada Limited, Toronto.

SALES OFFICES

ATLANTA 5, GA.....805 Peachtree Bldg.
BOSTON 10, MASS.....140 Federal Street
CHICAGO 30, ILL.....4560 Touhy Ave., Lincolnwood
CLEVELAND 14, O.....1033 Union Commerce Bldg.
DALLAS 7, TEXAS.....1628 Oak Lawn Ave.
LOS ANGELES 38, CALIF.....7051 Santa Monica Blvd.
NEW YORK 11, N. Y.....248 West 18th Street
PHILADELPHIA 2, PA.....225 South 15th Street

DU PONT
REG. U. S. PAT. OFF

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DU PONT MOTION PICTURE FILM

LEONARD CLAIRMONT
4530 MARIOTA AVENUE
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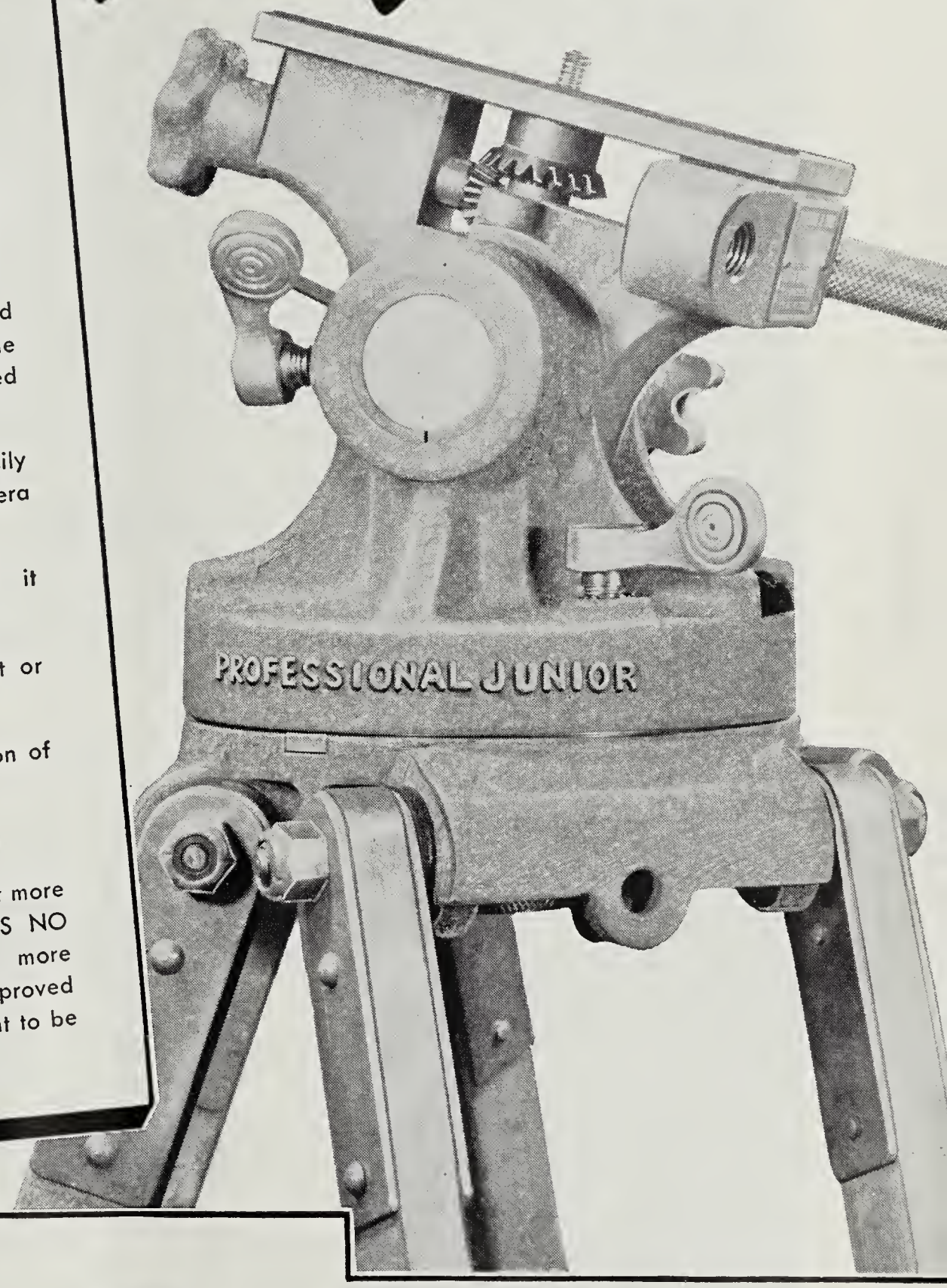
Tripod Perfection!

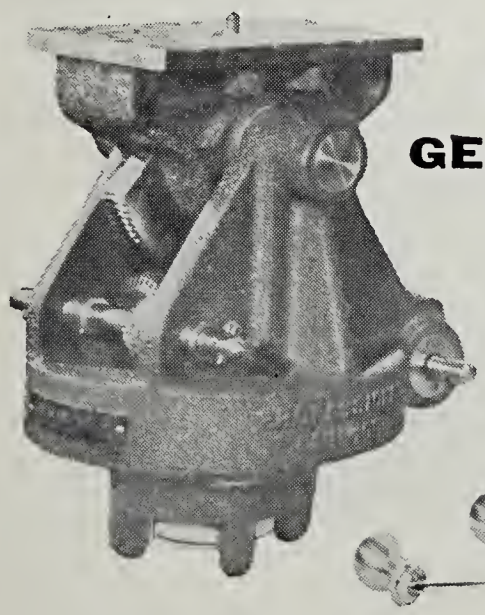
IMPROVED PROFESSIONAL JUNIOR TRIPOD

Always a great tripod, the latest improved PROFESSIONAL JUNIOR TRIPOD with the removable head, is the world's champion, with exclusive patented features no other tripod can approach:

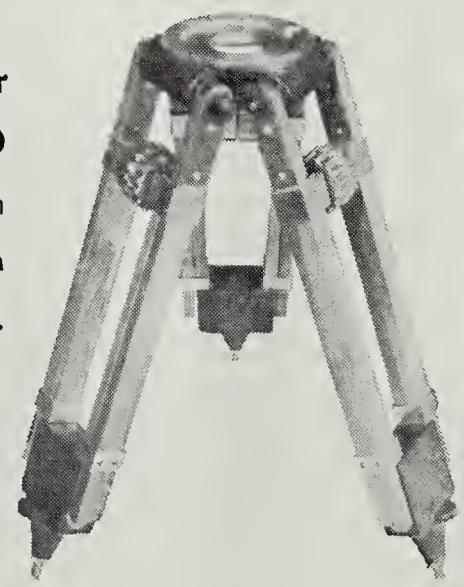
1. Simplified camera attaching method with easily accessible knob—no fumbling underneath camera platform—quick, easy, positive.
2. Adjustable telescoping pan handle—make it shorter or longer to suit your needs.
3. Additional pan handle sockets for left, right or reverse tilt.
4. Larger gripping area and sturdier construction of tilt and pan locking levers.
5. New tie-down eyelets in flange.

You'd expect this outstanding tripod to cost a lot more money, but here's the big surprise—THERE IS NO ADVANCE IN PRICE! For better, smoother, more efficient performance—see, test, try the improved PROFESSIONAL JUNIOR today. You won't want to be without it.





Professional Junior
GEARED HEAD
interchangeable with
Friction Head on
same tripod.



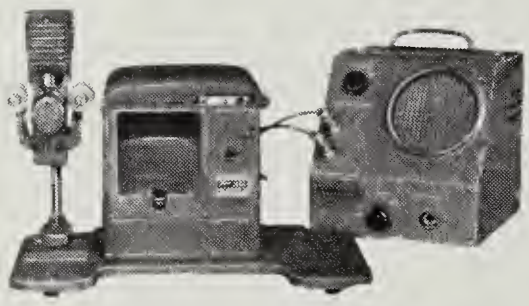
New Professional Junior Adjustable wood
BABY TRIPOD
—for friction and geared Heads.
Has substantial shoe and spur.
Measures from floor to flange 25" extended—
17" collapsed.
High-Hat Low Mount Available

FRANK C. ZUCKER
CAMERA EQUIPMENT CO.

DEPT. A-3-25 315 West 43rd St., New York 36, N.Y.

EVERYTHING

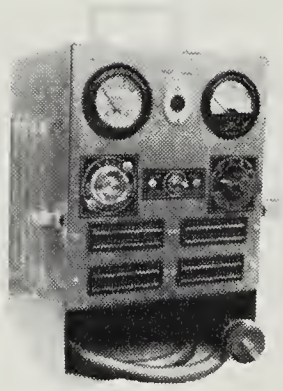
FOR MOTION PICTURE AND TELEVISION PRODUCTION



THE CAMART DUAL READER . . . permits you to edit single and double system sound with any silent picture viewer. Hi-fi lip-sync sound. **$195.00**



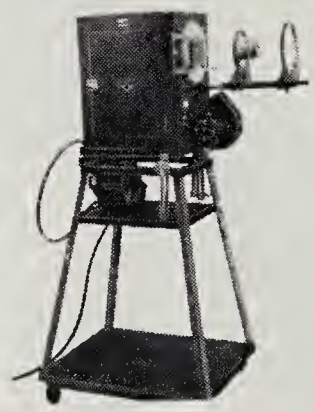
CAMART TV MIKE BOOM . . . a portable model for studio or location. Rear handle for directional mike control, internal wires, noiseless. 13′ boom arm can be folded for transportation in your car. **$245.00**



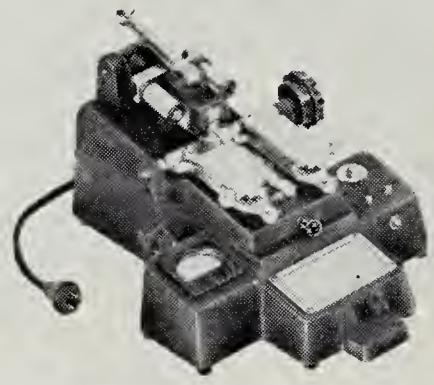
COLORTRAN Lights and Converters in stock. Packaged studio lighting in convenient cases. High intensity converters from **$57.50 and up.**



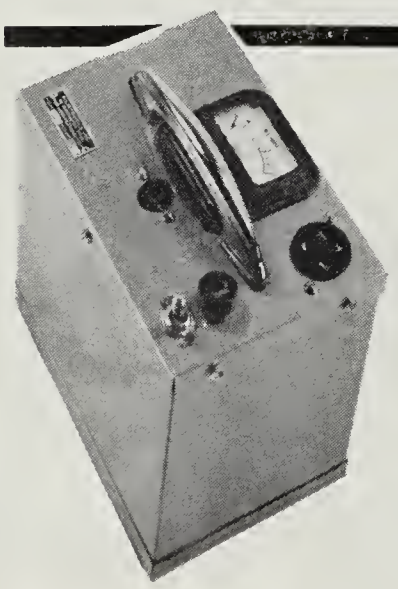
ECCO #1500 Speedroll Applicator, an efficient time-saving method for cleaning your film, offers maximum performance with minimum waste. **$29.50.**



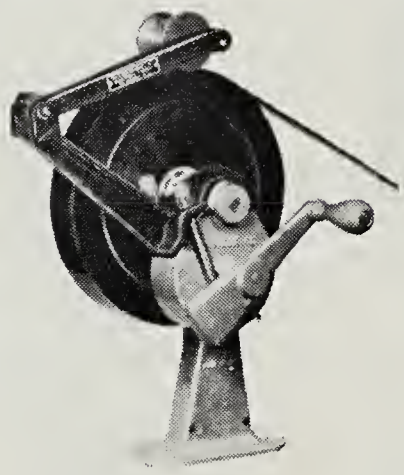
Why travel to location for backgrounds when you can do it with the Bodde Rear Screen Projector. Model P-3AC for 4x5 glass slides, 2000 watt intensity with step-up voltage transformer, 9 ft. by 12 ft. rear screen with frame.



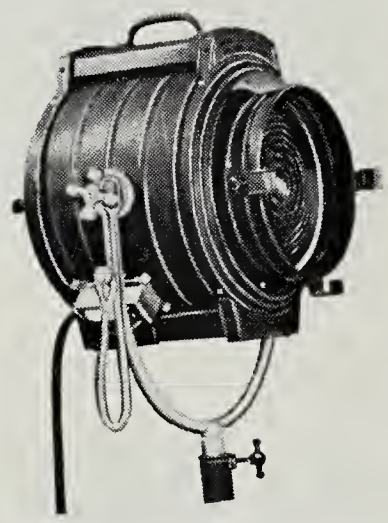
PRESTOSEAL electric butt-weld splicer. No scraping, no brushes, no cement. Perfect alignment, permanent splices in seconds. For 16mm or 35mm, **$547.80.** 16mm or 35mm head, **$265.00**



FILMTRONIC portable power supply unit for Auricon Cine Voice and Pro cameras, provides 110 volts 60 cycles on location. **$68.50.** Master Model for Super-1200 camera **$169.50.**



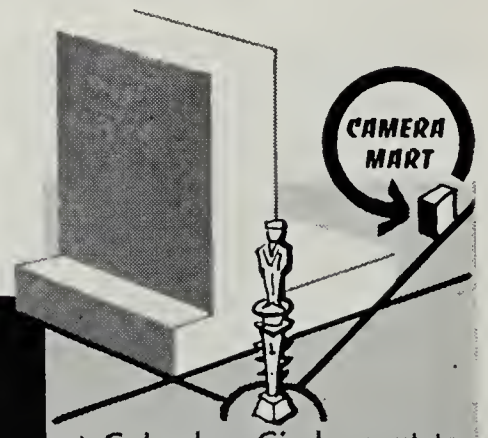
TIGHTWIND ADAPTER . . . winds film smoothly and evenly without cinching or abrasions. Fits 16mm & 35mm standard rewinds. With core adapter, **$29.00.**



BARDWELL-MCALISTER LIGHTS . . . complete stock of 750 to 1000-watt spots and accessories. From **$81.00.**



MACO VIEWFINDER . . . formerly Maier-Hancock; professional-type side viewfinder, with large, bright, erect image. For Cine Special, Filmo, Bolex and Cine-Voice cameras. **$139.50**



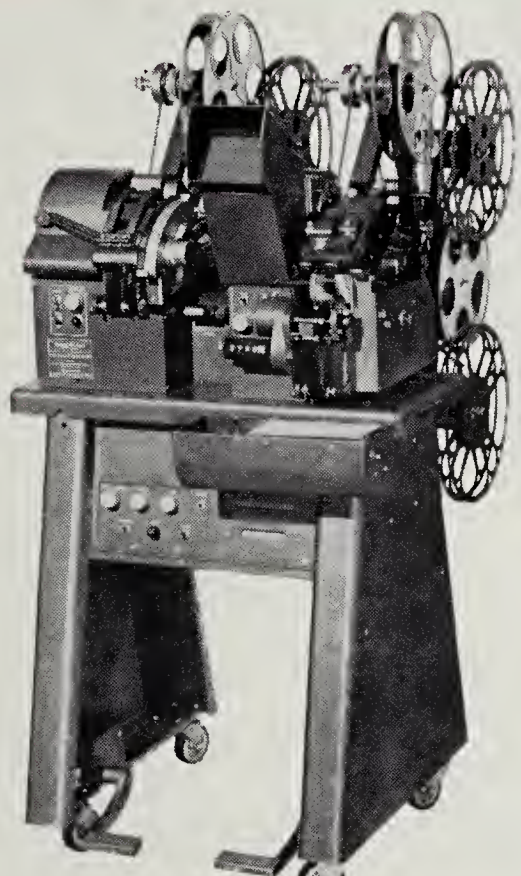
at Columbus Circle next to New York's new Coliseum

the CAMERA MART inc.

1845 BROADWAY (at 60th St.) NEW YORK 23 • PLaza 7-6977 • Cable: Cameramart

NEW J. G. McAlister "EDIMAC"

RUNS 16MM AND 35MM SOUND AND PICTURE SIMULTANEOUSLY



The EDIMAC cuts editing time up to 30%.
Nothing is complicated. Every operation is simple, quiet, easy for anyone familiar with standard equipment. The principle's the same. But what an improvement!

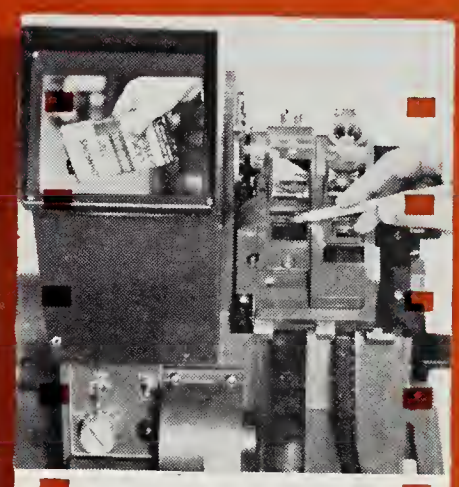
WRITE TODAY FOR COMPLETE INFORMATION, including price F.O.B. Factory and free descriptive booklet.

EXCLUSIVE FULL YEAR GUARANTEE!
J. G. McAlister guarantees the new EDIMAC against all mechanical defects for one full year. No other editing equipment manufacturer can promise such trouble-free performance.

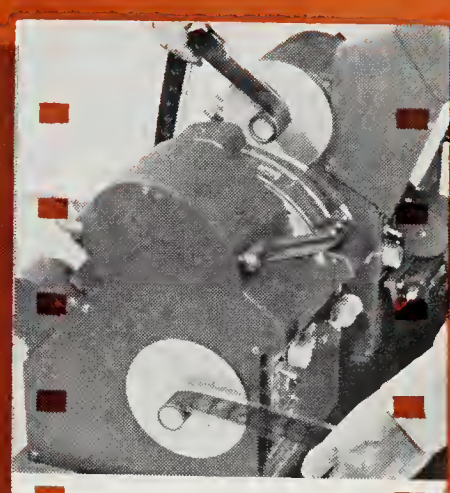
The newest, most advanced lighting and production equipment is made by

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Hollywood 38, California

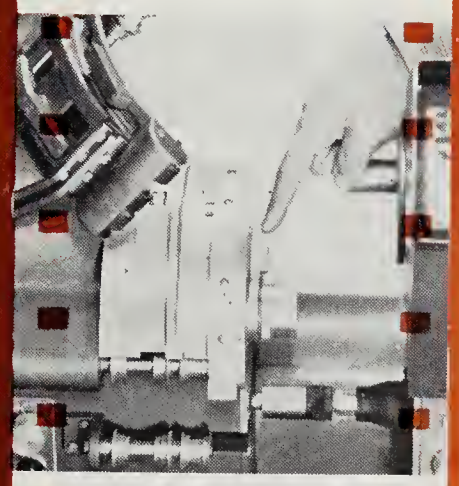
Now, for the first time, one editing machine runs 16mm film and 35mm film simultaneously with 16mm magnetic-optic and 17½mm magnetic or 35mm magnetic-optic



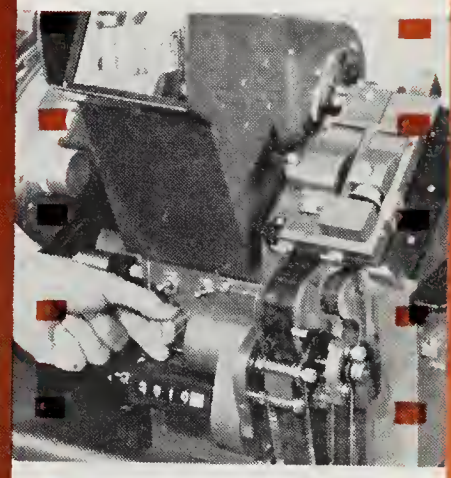
Marking and retouching 50% easier! Optical unit swings completely away, revealing the entire frame, unobstructed!



Rewinding operations simplified by a high-speed rewind on picture head, a low-speed rewind on sound head—and a new idea in foot pedal control.



Run negative film with absolute safety. Magnetic head never touches film while optic is in use.



Adjust picture brilliancy at the turn of a dial. Variable light control aids in pre-viewing light and dark prints.

And that's not all. Scores of other important features boost your output, enhance your skill, solve all major editing problems.



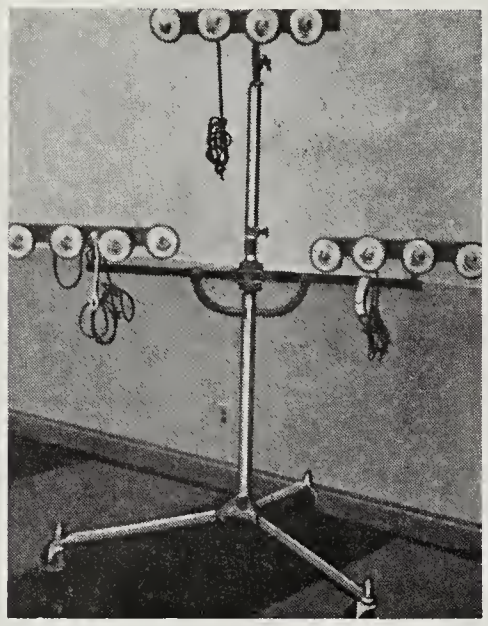
TWO DOLL(IE)S WIN SUPPORTING AWARDS

Miss Jo Van Fleet wins Academy Award for "Best Supporting Actress" in "East of Eden," Warner Brothers.

J. G. McAlister Dual Steering "Crab Dolly," invented by Mr. Steve Krilanovitch, wins Academy Award for "Best Support of Camera" from Academy of Motion Picture Arts & Sciences. The J. G. McAlister "Crab Dolly" is being used in *all* motion picture studios.



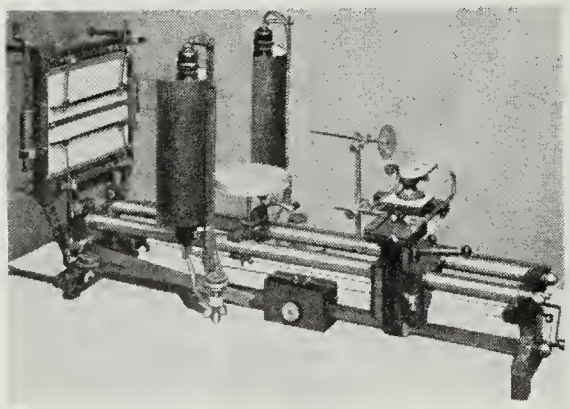
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Multiple Striplites
for Spot or Flood



Extends 4 to 15 ft. high. For indoors and outdoors. 3 Striplites, each with 4 swivel sockets and switch—halds twelve 150-watt R40 lamps—totaling 1800 watt illuminatian. Folds to portable size. Weatherproof cable, rubber tired casters. Can also be used with ColorTran converters. Orig. U.S. Govt. cast $180, excellent condition—
now priced only..... $29.50

Same with One Striplite,
holds four 150W lamps..... **$22.50**
Multiple Striplite Lamp Heads only..... **$ 4.95**
Telescopic Tripod Stand Only
with 3 brackets..... **$19.95**

16/35mm Titler & Special Effects Kit



For Professional Results!

Praduces widest range of titles, trick films, cartoons, animation, etc. Takes mast types of movie cameras. Horizantal and vertical operation. Table adjustable north, east, south, west. Title board size 7⅛″ x 9½″ with tipping frame, overall dimensions 40″ x 15″ x 12″, weight 40 lbs.

- Twin lamps with reflectors far front and rear illuminatian.
- Title card frame, platens at tap and bottom.
- Distance scale for correct setting of camera lens.
- Running plus climbing title device far producing any number of title lines. Turntable for rotating titles, small objects and many ather purposes.

MODEL TG II, 16mm **$159.50**
MODEL TG III, 16mm **198.50**
MODEL TG, IV, 16/35mm (illustrated)..... **295.00**

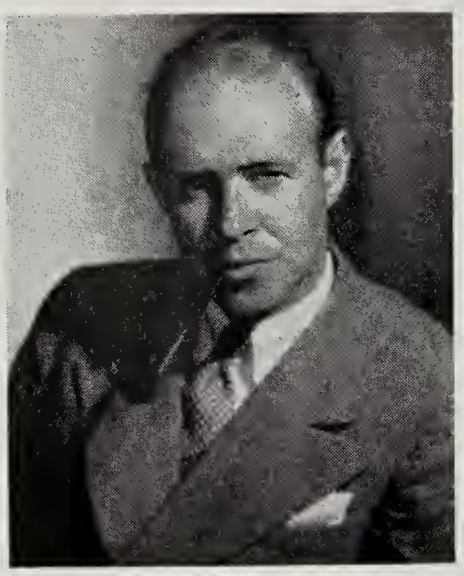
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George Folsey Elected President Of Amer. Society Of Cinematographers

Ruttenberg, Biroc, Krasner and Rennahan also voted as Officers for 1956-57



GEORGE J. FOLSEY, A.S.C.

GEORGE J. FOLSEY, a director of photography at Metro-Goldwyn-Mayer Studio for the past twenty-five years, last month was elected President of the American Society of Cinematographers. He succeeds Arthur C. Miller, who retired after serving two terms.

Previously, Folsey had served on the Society's Board of Directors in various offices from Secretary to Vice-President. He has been a member of the Society since 1927.

One of M-G-M's top flight cinematographers, Folsey has photographed a big share of that studio's most important feature productions. His credits include such memorable productions as "Green Dolphin Street," "If Winter Comes," "Take Me Out To The Ball Game," "Adam's Rib," "Lovely To Look At," "Million Dollar Mermaid," "Executive Suite," "Seven Brides for Seven Brothers," "Deep In My Heart," and "Forbidden Planet," soon to be released.

Despite his impressive work, he has, as he terms it, "been always a bridesmaid, but never a bride," in the matter of Academy Awards. His photography has been nominated for awards more then a dozen times. Last year he was on the Nominees' list with two nominations: for "Executive Suite" for best black-and-white photography, and "Seven Brides for Seven Brothers," color photography. He's hopeful that the Academy's voting will yet bring him a cherished Oscar before he retires, which he can display along with the dozen or more Nomination certificates he has acquired over the years.

George Folsey is one of the few top men in the field who did not come into the motion picture business with some previous experience in photography. When he got his first job with an eastern studio at the age of fourteen, he had no interest in photography whatever. He had found a job as office boy at the old Lasky Feature Play Company in New York and had accepted it with routine interest until the following day when he saw trekking through the Studio's front door many of the great movie stars he had admired at the neighborhood nickelodeon: Marguerite Clarke, Carlyle Blackwell, Mary Pickford, Louise Huff, John Barrymore, Harold Lockwood and other "greats" of the days of the memorable early "silent" films.

"The more I saw of the picture business, the more I wanted to be a part of it," Folsey says. "Eventually there came the opportunity for me to go out on the sets and work with one of the cameramen. Assistant cameramen were a very new luxury in those pioneer days. It was my first introduction to photography, and somehow I took to it instinctively. I loved to stay at the studio nights and work with my boss who taught me how to develop film, shoot titles, develop and make prints of stills, etc.

"Finally after four years as an assistant, I was promoted to second cameraman. Shortly thereafter, the cameraman on a picture whom I was assisting walked off the job half-way through the production. I was asked if I could take over and complete it. With the confidence of a brash eighteen-year-old I said 'yes!'—and stepped into the most difficult assignment I have ever had.

"For it wasn't just an ordinary picture. The star, Alice Brady, played a dual role—and a difficult one. She not only had to talk to herself in the two characterizations, but to walk all around herself, shake hands with herself, and even pin jewelry on herself. Today's great standbys—process photography and optical printing—weren't even invented yet, so I had to do the whole thing in the camera.

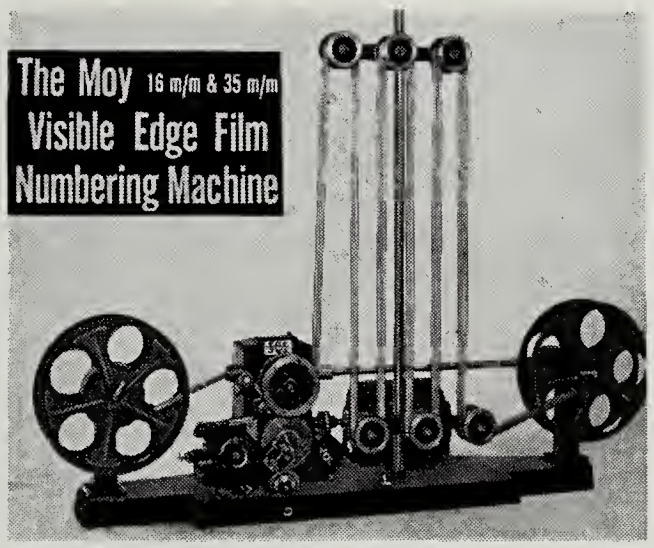
"Probably because I didn't know any

(Continued on Page 290)

The One-Stop Source Of Supply

Identify Your Films Instantly

Unnumbered films cause confusion and loss of time. The MOY edge numbers every foot of 16, 17½, 35mm film and simplifies the task of checking titles, footage.



The MOY Visible Edge Numbering Machine replaces cue marks, perforations, messy crayons, punches, embossing—does not mutilate film. Work prints showing special effects, fades and dissolves require edge numbering to kep count of frames cut or added. Multiple magnetic tracks in CinemaScope sterephonic recordings make edge numbering a MUST. Write for brochure.

With NEW Improved Non-Clog Inking System $2475

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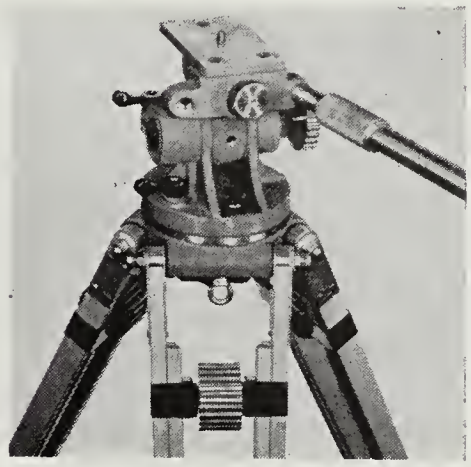
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The All-Purpose Rapid Action Film Processor

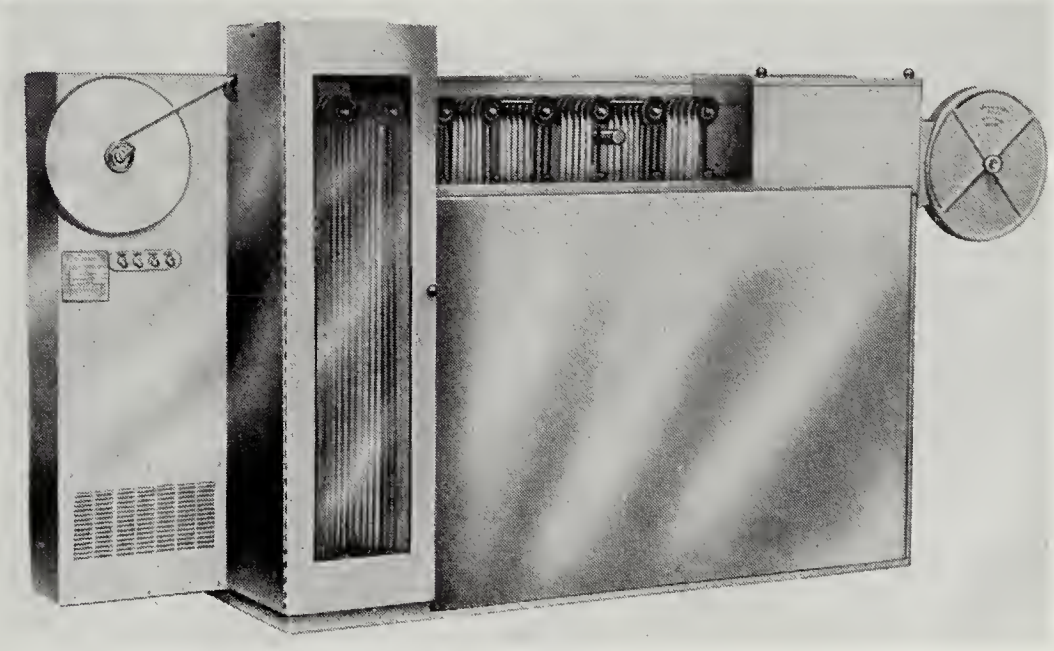
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REVERSAL DEVELOPING MACHINE

A true one-man lab. No special skill required!

Bridgamatic 16mm Automatic "Rapid Action" Reversal is the perfect All-Purpose Processor — assures quality pictures — reversal speed 1200′ per hour — also does negative and positive film. Light-tight compartment for daylight operation. Completely automatic "Dry-to-Dry." Simply plug in and operate. Ideal for TV stations, photo finishers, industrial or documentary producers, microfilmers, small labs, universities, etc.

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WRGB-TV, Schenectady, N. Y.
Merkle Film Lab., Long Beach, Calif.
Microfilming Corp. of America, Maywood, N.J.
Master Motion Picture Co., Boston, Mass.
Naval Microfilm Laboratory, Washington, D. C.

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HOLLYWOOD BULLETIN BOARD

News briefs about the A.S.C. its members, and important industry personalities



TURNING OVER the gavel of office to newly-elected President of the A.S.C., George J. Folsey (left) is outgoing President Arthur C. Miller. Event took place at Society's annual installation of Officers last month.



OSCAR-WINNER James Wong Howe is presented with commemorative plaque by A.S.C. President Folsey, which Howe then mounted on the A.S.C.'s "Wall of Fame." Howe won Oscar for photography of "The Rose Tattoo."



ALSO MAKING the A.S.C.'s "Wall of Fame" for first time is William Sickner (left) who is being presented with plaque commemorating his accomplishment in winning an Emmy this year for achievement in TV film photography.



AMONG presentations made during A.S.C. Installation ceremonies was plaque by outgoing-President Arthur C. Miller to Treasurer Walter Strenge in appreciation of his assistance and services to Miller past two years.

Two Hollywood cinematographers were admitted to active membership in the American Society of Cinematographers last month. They are Jack Warren of Paramount Studio and Clarence Slifer of 20th Century-Fox.

The following were also voted to Associate Membership in the Society: Robbert E. Burns, Ft. Lee, N. J.; John H. Maynard, Chicago; William J. Reddick, Ft. Lee; Thomas L. Gibson, Chicago; and Wilford W. Bower, Ft. Lee. All are associated with W. J. German, Inc.

• • •

Gilbert Warrenton, A.S.C., has completed the photography of 52nd and final episode in the TV film series, "Sergeant Preston of the Yukon," produced by Skinner Studios, Hollywood. The entire series was photographed on 35mm Eastman Color film. As most of the action takes place in snow country. company was kept on the move. shoot-

(Continued on Page 280)

Safety...10 miles high!

...assured by Turco's Flaw Detection Method filmed at Northrop Aircraft with Auricon 16mm Sound Cameras



Cralen Enterprises, Inc., filming William Cox of Northrop Public Relations, as he interviews Robert Love, jet ace, after test flight in Northrop F-89 all-weather interceptor.

NORTHROP AIRCRAFT

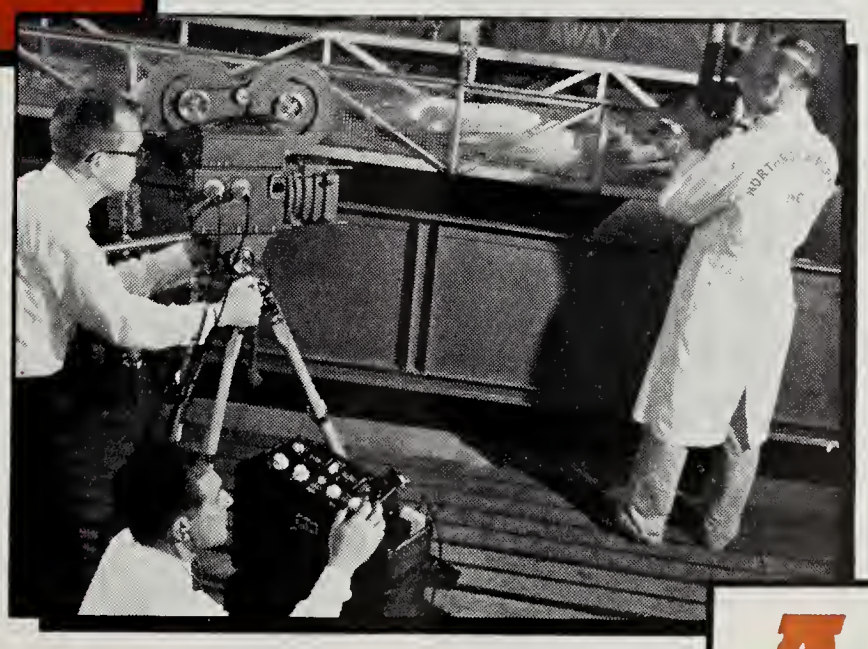
Auricon Hollywood

AURICON

TURCO Products

The full story of flaw detection in metals with Turco "Dy-Chek" Dye Penetrant is the subject of a new Training Movie in sound and color, filmed at Northrop Aircraft with Auricon 16mm Sound-On-Film Cameras.

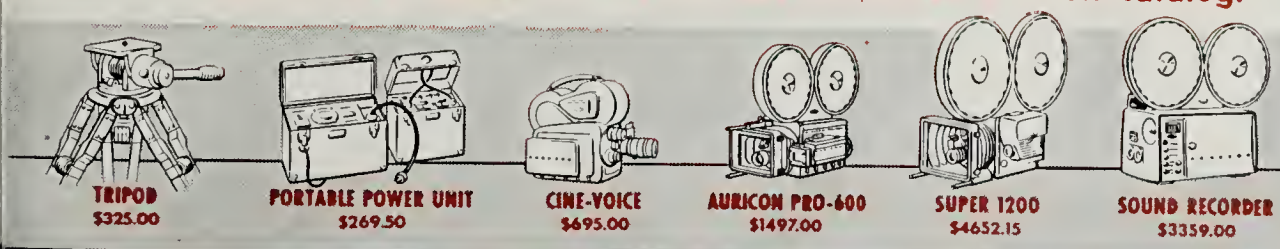
The film shows how "Quality-Control" checks metal parts for the Northrop F-89 all-weather jet interceptor right on the production line, with Turco's "Dy-Chek" inspection process!



Turco's new Training Movie on "Dy-Chek" Flaw-Inspection Process, is shown during filming at Northrop Aircraft, with Craig Curtis (at camera) and Lennie Blondheim, both of Cralen Enterprises, Inc., Hollywood, California.

This film is another example of how Training Movies and Industrial Motion Pictures can be produced with precision and fidelity using Auricon 16mm Sound Cameras. Professional Auricon Built-in Features, include Self-blimping Camera design, Synchronous Motor Drive, Auricon-Electromatic Take-up, etc. Many producers and cameramen have named Auricon..."the finest 16mm Sound Camera ever built!"

Auricon Cameras are sold with a 30-day money-back guarantee. You must be satisfied! Write for free illustrated Auricon catalog.



Auricon Hollywood

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MANUFACTURERS OF SOUND-ON-FILM RECORDING EQUIPMENT SINCE 1931



MOVIELAB FILM LABORATORIES, INC.
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BULLETIN BOARD

(Continued from Page 278)

ing sequences in Aspen, Colorado; in Kernville and Big Bear Lake, California, and at Mammoth Lake. According to Warrenton, 60% of all shooting was exteriors.

• • •

Karl Freund, A.S.C., last month terminated a five-year association with Desilu Productions as Director of Photography. Freund is credited with being the first to develop and put into use the system of three cameras for shooting TV films in extended takes. He had photographed most of the "I Love Lucy" shows filmed to date. He also photographed numerous episodes of the "Our Miss Brooks" and "December Bride" television shows.

Freund has plans to return to production of feature-length films as producer-director.

He continues active as president of Photo Research Corporation, Hollywood.

AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 8, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes nonresident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

•

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Joseph Ruttenberg, First Vice-President
Joseph Biroc, Second Vice-President
Milton Krasner, Third Vice-President
Walter Strenge, Treasurer
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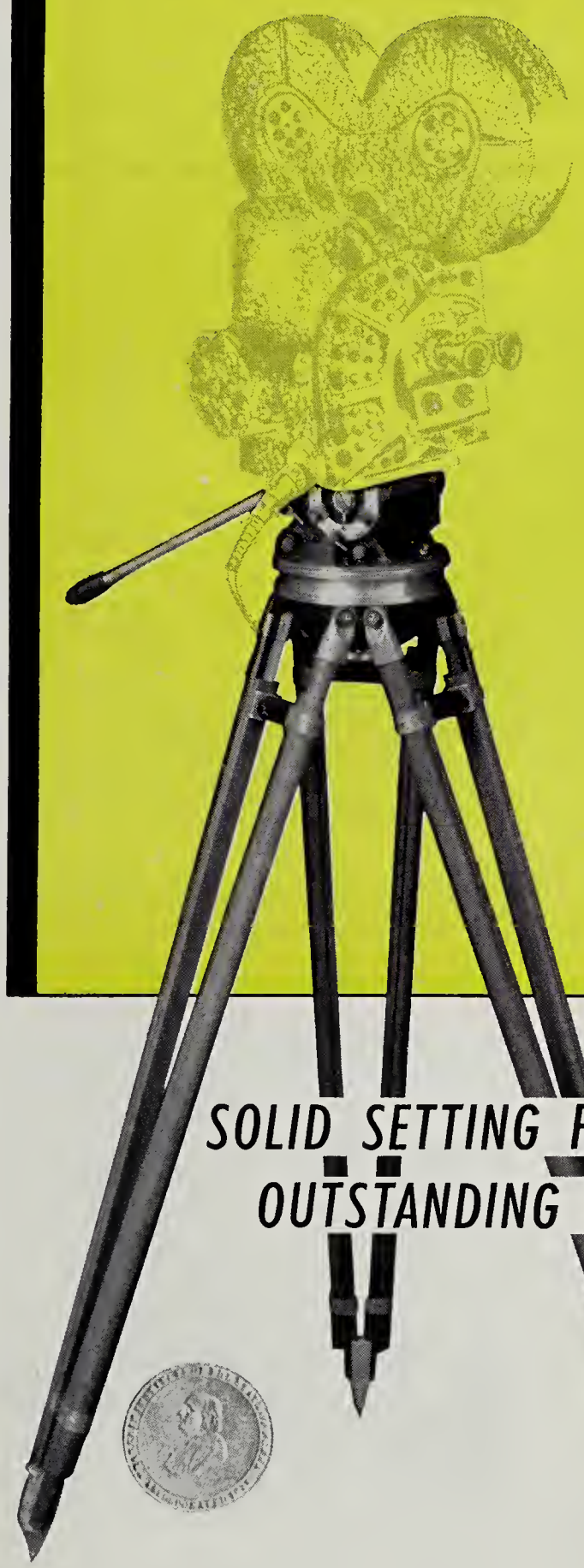
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The motion picture cameraman's answer to taking better news or studio pictures! Experienced cameramen appreciate the advantage of photographing "follow shots" without the use of a crank. By a slight pressure on the handle the Akeley Gyro follows the movement of any object, regardless of direction.

The Akeley Gyro Tripod features three different pan speeds, each easily selected by the operator, giving a wide range of movement to meet all possible requirements. The gyro mechanism is provided with ball-bearings throughout, insuring ease of action. Leveling is done quickly by releasing a knob on the bottom of the tripod. The gyro head can be tilted and the stops easily adjusted.

Inquire about the new Akeley Scanoscope for wide screen photography, the latest development in 35mm Anamorphic lenses.

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ONE CAMERA

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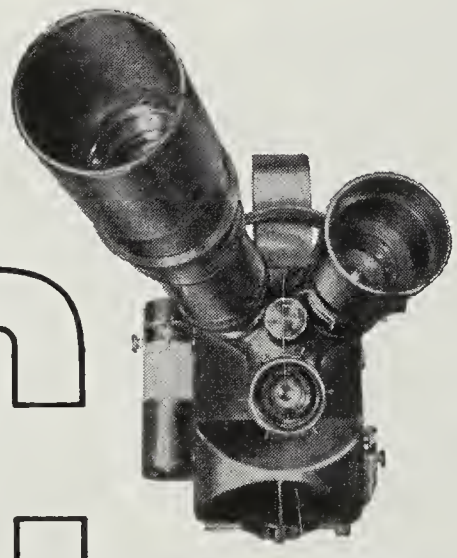
Reflex Motion Picture Camera

The perfect camera for the motion picture film maker working in both 16mm or 35mm color or black and white.

LOOK AT THESE ADVANTAGES—

- The same lenses, same motor drives, same sound blimp and accessory equipment used for both 16mm or 35mm — to convert simply change the magazine.
- Precise rugged movement
- Reflex viewing
- 200 degree adjustable shutter
- Divergent three lens turret
- Automatic film gate 400′ magazines 16 or 35mm — the 16mm magazine will accommodate daylight spools as well as standard core load.
- Light weight — only 14 pounds with 3 lenses, 400′ magazine, and 6/8 volt motor.

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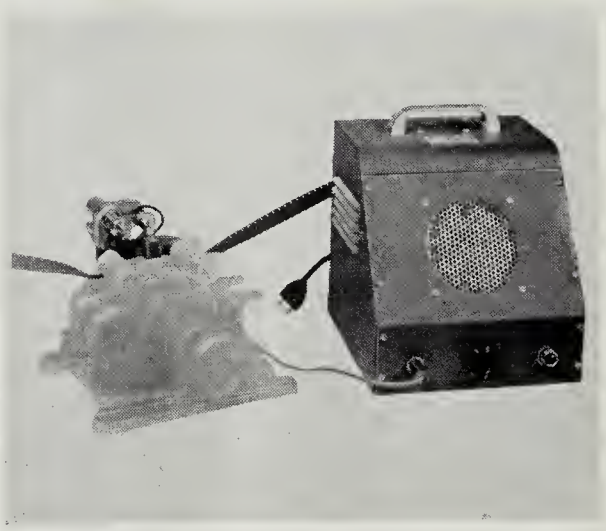
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WHAT'S NEW

. . . in equipment, accessories, service



Synchronizer Attachments

Precision Laboratories, Inc., 1139 Utica Ave., Brooklyn 3, N. Y., announce a new line of magnetic synchronizer attachments for use with Moviola, Neumade and HFC synchronizers in editing magnetic sound tracks. The new units feature magnetic head mounts with adjustments, for track and magnetic tape and film thickness.

Incorporated in each unit is a safety-fused 4-watt amplifier with pilot light; built in heavy-duty Alnico-V PM speaker; six-foot line cord, and six-foot cable for the magnetic head. Prices and further data may be had by writing the manufacturer.

RCA to Service H-F Equipment

RCA Service Company's New York repair shop facilities at 419 West 54th St., has been appointed official servicing agency for Houston-Fearless film processing and TV studio equipment, for the East Coast.

New Sound System

A new sound system for small theatres called the Westrex Economy System is announced by Westrex Corp., New York. The single-channel system is composed of the following main units:

Westrex RII photographic reproducer, which features silent chain drives and oilite bearings; Westrex Economy 45A single-channel transmission cabinet; Westrex 26-type 30-watt power amplifier; and the Westrex 14-type loudspeaker assembly.

Non-toxic Film Cleaner

Neumade Products Corp., 330 West 42nd St., New York 36, N. Y., announces a non-toxic cleaning solution for motion picture film. Trade-named "Renovex," solution can be used anywhere without usual precautions regarding ventilation or exhaust of fumes. List price is $3.00 per quart. $9.90 per gallon.

Anti-dust Brushes

Polonium, which emits radioactive Alpha Rays, and thus neutralize surfaces so that they will not attract further dust, is incorporated into the design of a line of brushes designed especially for photographic use, such as cleaning surfaces of lenses, film, film gates, etc.

Trade-named Alpha Ray Static-Brush, manufacturer is C & K Gugenheimer, 898 River Road, Edgewater, New Jersey.

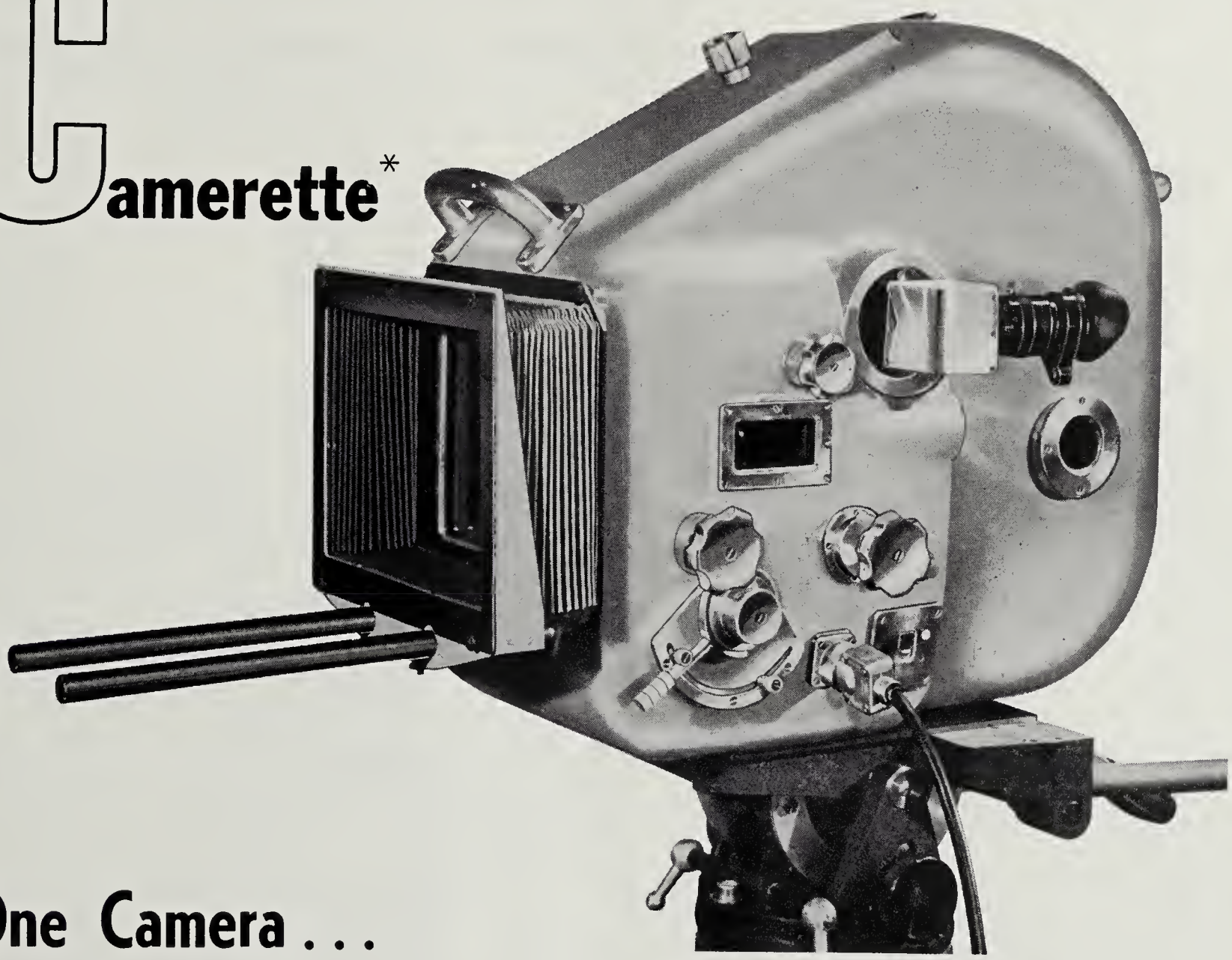


"Giraffe" Camera Crane

S.O.S. Cinema Supply Corp., 602 W. 52nd St., N. Y. City, has been appointed distributor for the Giraffie camera crane. Crane is self-contained and operates independently of the truck or trailer chassis on which it may be mounted. It can also be placed on a barge, dock, trailer, railcar, etc.

Platform will support load of 450 pounds and remains level at all times. Foot controls on platform leave cameraman's hands free for handling camera. Crane may also be operated from its base through dual set of controls.

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One Camera . . .
One Blimp . . .
For Both 16mm and 35mm Cinematography

- Reflex viewing through taking lens at all times.
- External Follow-focus control.
- External iris control.
- Accommodates 18.5mm through 100mm objectives.
- Quick-change magazines and lenses; retractable camera carriage.
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- Completely soundproof.

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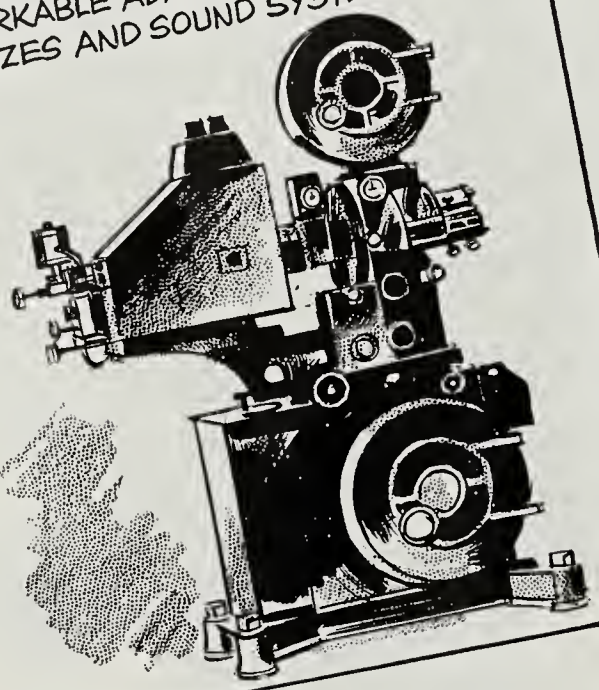
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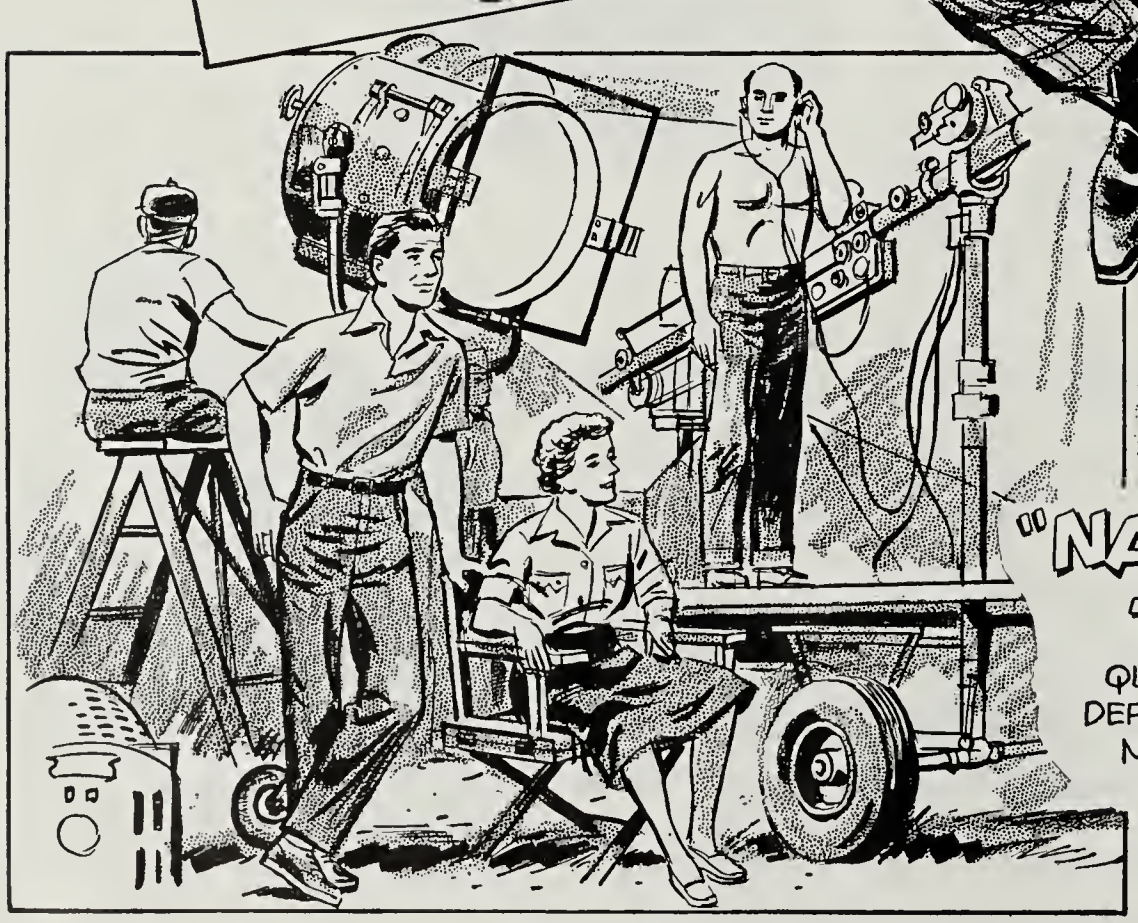
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Things are seldom what they seem . . . W. S. GILBERT

. . . but a pretty face is one end which justifies the means.

A film laboratory, however, (if you've wondered why we brought the subject up at all) is another matter. Here the facade is not important, is not an end in itself. It is the abilities of the men and equipment behind the facade that count.

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Zoomar lens 1" to 3" f/2.8 for Arriflex . . **$579.00**

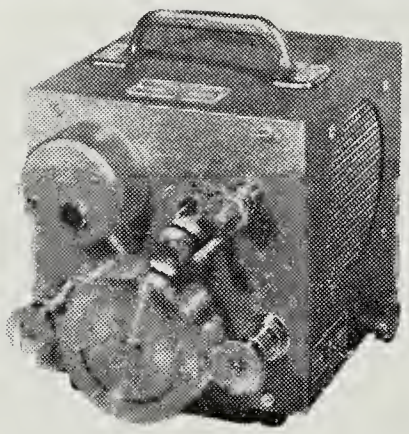


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Optical Model 600—16mm and 35mm . . **$185.00**

Magnetic Model 700—16mm, 17.5mm, 35mm and ¼ inch **$198.00**

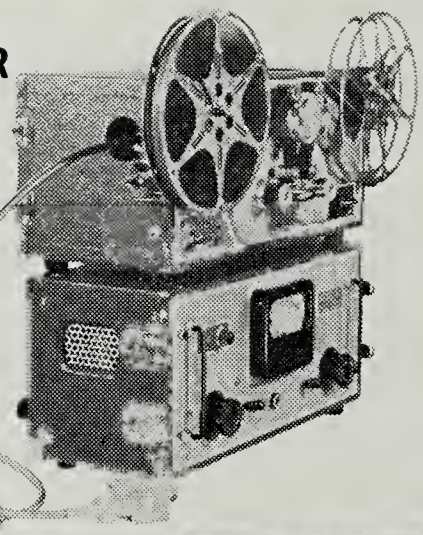
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A complete sound system that weighs only 27 lbs! Features high gain "long-shot" microphone channel. Dialog equalization for "speech-music" selection. Self-contained playback system for "film-direct" monitor. Famous Magnasync "synkinetic" precision film transport. High speed rewind, sync speed reverse and fast forward. Convenient arrangement for "sync marking." Footage counter, extended capacity arms, "quick-detach" mount for special motors. Unconditionally guaranteed! . . **$895.00**





16mm CINE-VOICE

AURICON

AURICON CINE-VOICE

popular-priced 16mm camera that photographs a sound track, perfectly lip synchronized with the picture—to be played on any 16mm sound projector. Single-lens model **$695.00**

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16mm sound-on-film camera (self-blimped) with 3-lens turret for "C" mount lenses. 1200 ft. capacity for 33 minutes recording time. **$3319.25**



SUPER 1200

AURICON PAN-TILT professional tripod, wgt. 27 lbs. **$325.00**

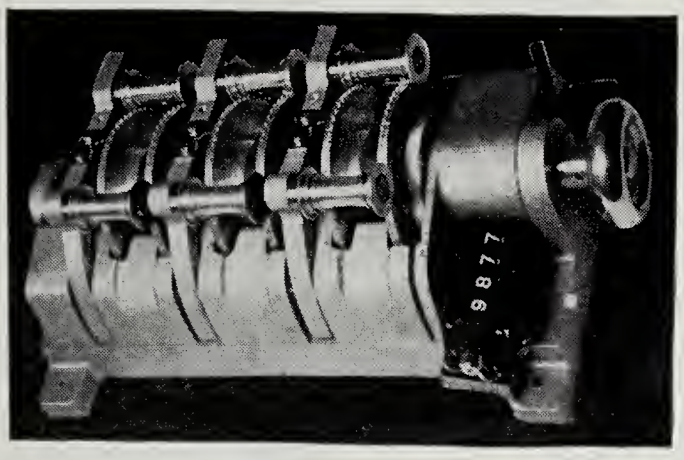
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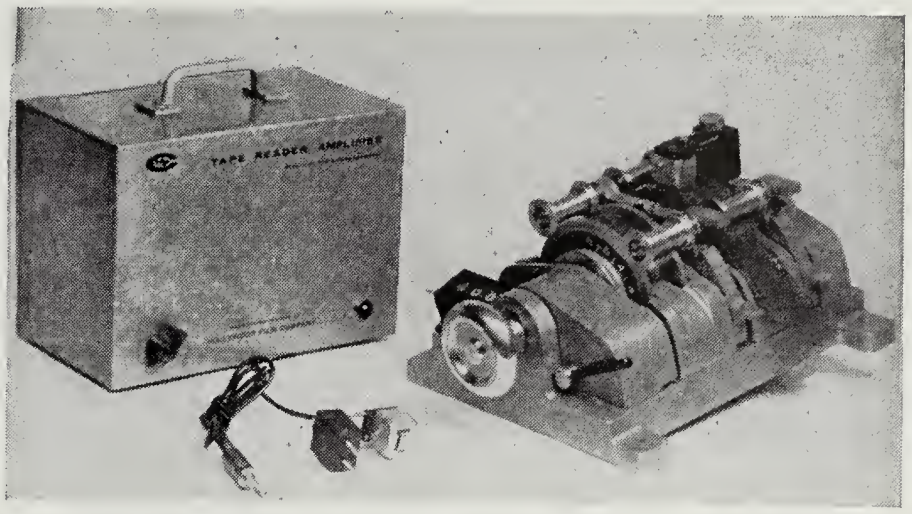
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SYNCHRONIZER HEAVEN





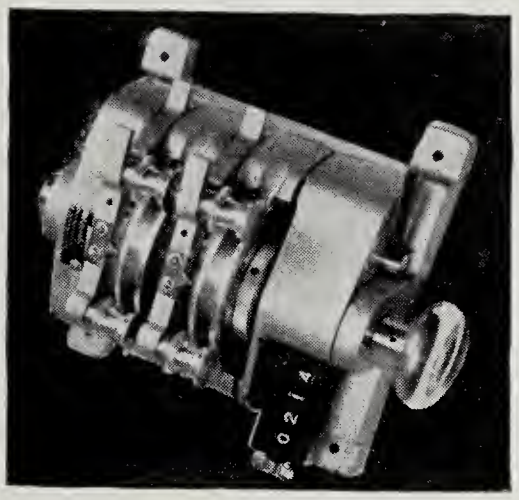
35mm 3-Way Synchronizer **$165.00**



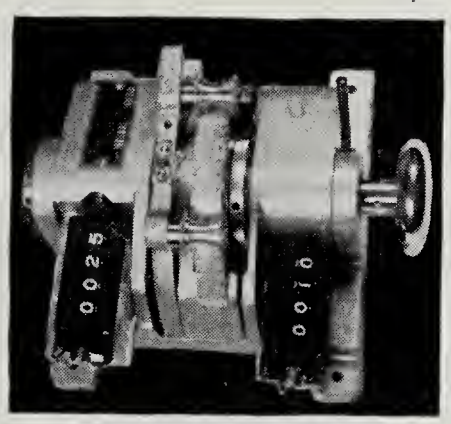
1. Fastens to roller arm of synchronizer.
2. Sync dailies quickly without using editing machine.
3. Ideal for checking sound track for words or effects to be replaced.
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5. Tape head can be slid up and back to read a track in any position of fullcoat or magnastripe.

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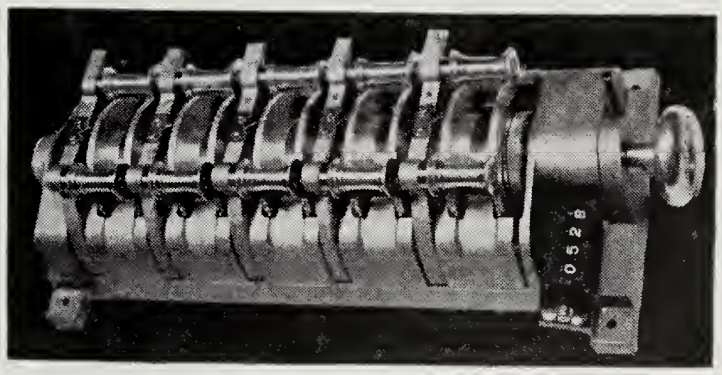
HFC Magnetic Tape Reader Synchronizer attachment	$34.50
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Complete Unit	89.50



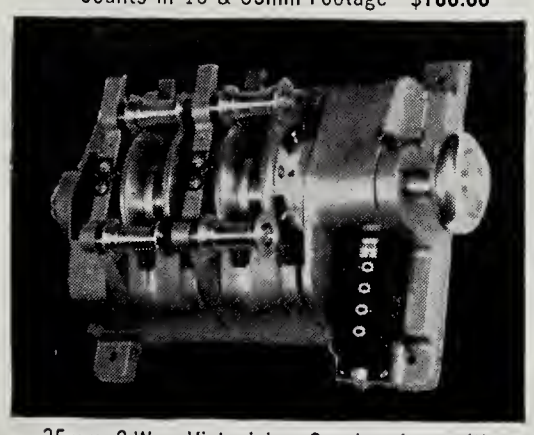
16mm 2-Way Synchronizer **$125.00**



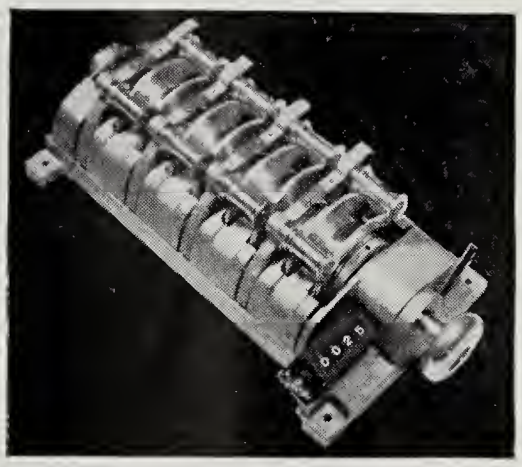
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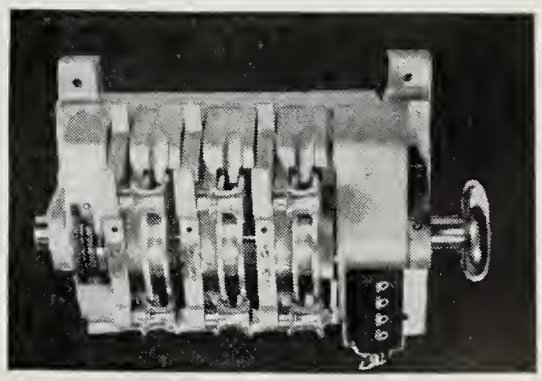
35mm 5-Way Synchronizer **$225.00**



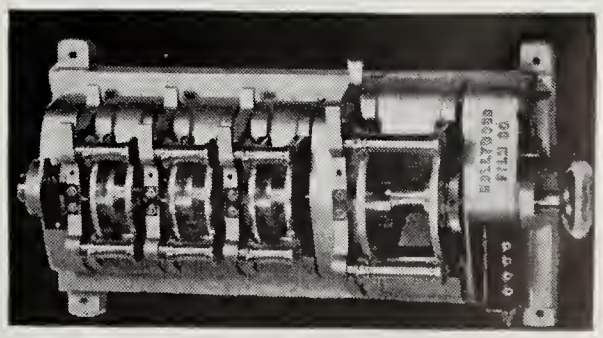
35mm 2-Way Vistavision Synchronizer with
Footage & Frame Counter **$160.00**



35mm 4-Way Synchronizer **$190.00**



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Talk was that other film sizes than 16mm could do better jobs in the industrial, educational and commercial fields.

Not while there is a film laboratory like Precision, bringing 16mm to the peak of perfection. In fact, we are demonstrating daily that 16mm can do more—and better—things in movies than have been done before.

Precision Film Laboratories developed unique equipment to realize the fullest potentialities in 16mm, such as the optical track printer; timing, fades, dissolves, scene-to-scene color corrections, invisible splicing without notching originals; direct electric printing and many others.

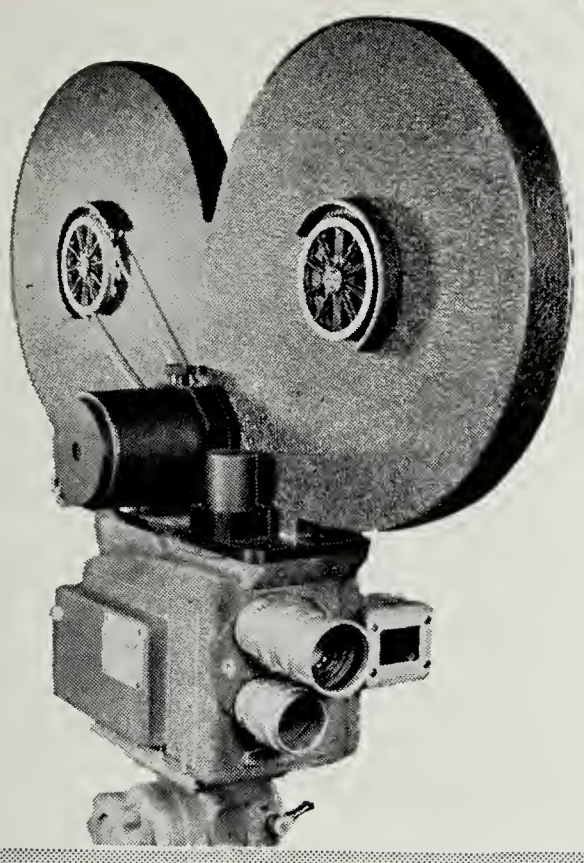
No, 16mm is just beginning. Depend on it for your next film project and, of course, depend on Precision to do exactly the right job in bringing life and sparkle to the best of your production efforts.

you'll see **and hear**

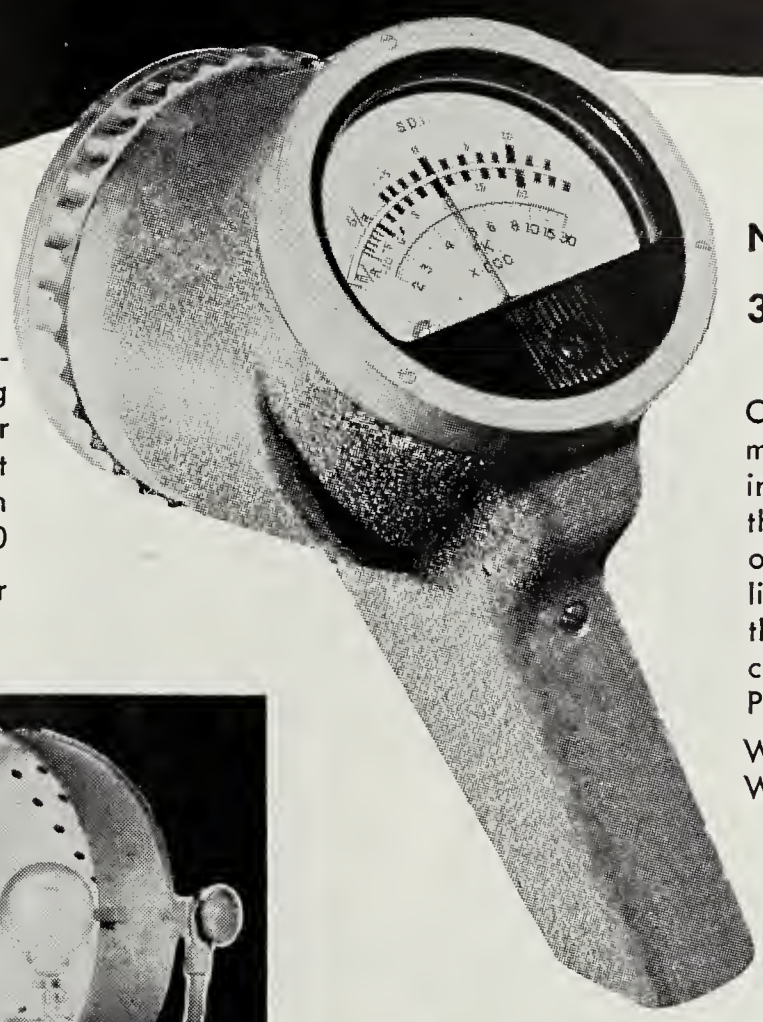
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Includes torque motor for magazine takeup. This precision conversion permits attachment of 400 ft. magazine (11 min. running time) or 1200 ft. magazine (33 min. running time). Also provides for installation of Veeder footage counter. We can convert your present Cine Voice or supply you with unit already converted for use with external magazines. Conversion-less magazines $450.00

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3-color **METER**

Only accurate meter that measures *all* light sources, including *daylight*. Measures the proportionate amounts of all 3 primary colors in the light source, and indicates the filters needed for positive color correction. Product of Photo Research Corporation.

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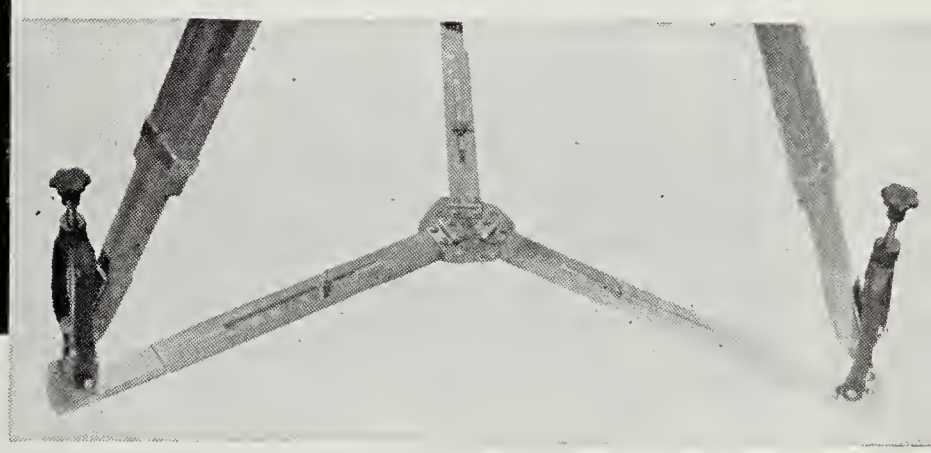


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Complete line of 16mm and 35mm Cameras

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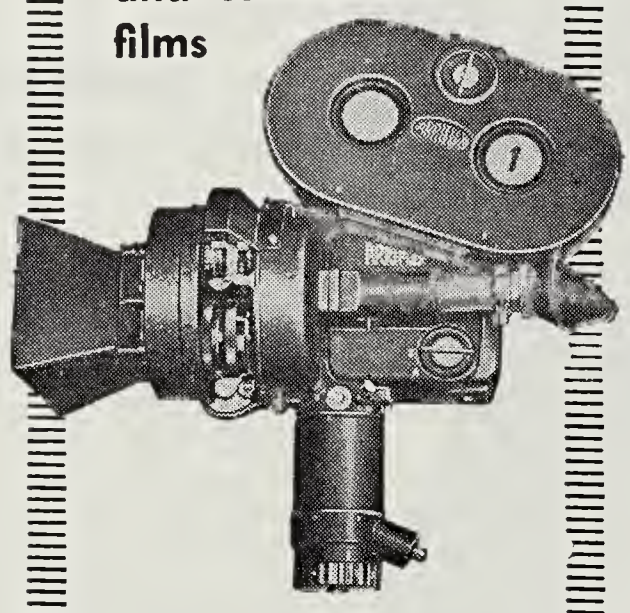
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ARRIFLEX

New 35 mm Model 2A
With 180° Shutter

A TRULY GREAT CAMERA

for TV, Newsreel and commercial films



For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200' or 400' magazine. Write for free folder.

Blimp now available.
16mm ARRIFLEX also available.

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CAMERA EQUIPMENT CO.
315 West 43rd Street, New York 36, N. Y.

GEORGE FOLSEY ELECTED A.S.C. PRESIDENT

(Continued from Page 276)

better, I worked out a comparatively simple method of doing these scenes. Instead of using elaborate mattes, I used lighting: I did many of the takes on a set completely upholstered in black velvet, and kept this from photographing by simply keeping all light away from it, and concentrated solely on my actors. Using this for some takes, and an identical, normal set for the others, I managed to get what the script called for.

"For the rest, I guess I was lucky. I'd learned pretty well what was then known about photographing sets and people—and I was particularly in luck with my star, for Miss Brady was in love, and I don't think anyone could have made her photograph badly, she was so radiantly happy. At any rate, she was pleased with what I did, and so were the director and producer. I was a full-fledged First Cameraman from that day on."

George Folsey recently completed the photography of M-G-M's provocative thriller, "The Fastest Gun Alive," about which he has written an article appearing in this issue. On May 1st, he begins shooting "The Power and the Prize," a black-and-white production for which he has worked out some unique photographic innovations.

In addition to the election of Folsey as President, five new members of the Board of Governors were elected for three-year terms. They are: Arthur Edeson, John Boyle, Russell Harlan, Milton Krasner, and Joseph Ruttenberg.

Alternate Board Members elected are: John Arnold, Robert Burks, Ellis Carter, Lee Garmes, Irving Glassberg, Ernest Miller, Victor Milner, Robert Pittack, Sol Polito, and Paul Vogel.

Other Officers, in addition to President Folsey, selected from within the Board of Governors to serve for the ensuing 12 months are: Joseph Ruttenberg, 1st V-pres.; Joseph Biroc, 2nd V-pres.; Milton Krasner, 3rd V-pres.; Walter Strenge, Treasurer; Ray Rennahan, Secretary; and Sol Halprin, Sergeant-at-arms.

INDUSTRY NEWS

A high-speed Motion Analysis Camera, capable of taking high quality pictures within the range of 5,000 per second and incorporating the most advanced features of high speed photography, has been designed by the Fairchild Camera & Instrument Corporation of Syosset, N. Y.

The lightweight 16mm camera, now undergoing field testing, has been designated the "Fairchild Motion Analysis Camera" and has been designed for Versatility as well as speed.

This new camera, utilizing rotating prisms instead of a blade shutter, can be adapted to many variations, each for a specific use. An Industrial model is planned which is capable of taking as many as 5,000 pictures per second; an Airborne model has been designed which has a maximum exposure speed of 2,000 frames per second; and a Missile hit-miss model, already proven to take 250 pictures per second, is being engineered to photograph up to 1,000 pictures per second. Both the Industrial and Airborne models have film capacities of 100 and 200 feet, using daylight loading spools.

The cameras are both lightweight and compact. To give particular speed ranges, a family of interchangeable 28-volt DC motors are used to drive the several models. Because of their lightweight and small size, the motors can furnish maximum acceleration in a minimum of time and the camera has sufficient power to start at high speed.

The cameras are simple to operate. There is only one switch and two sockets on each—one for motor power and one for the timing light. Loading is extremely simple. Speed of the camera can be varied during the passage of the film through the camera.

Applications of the Motion Analysis Camera include the recording of high speed electrical phenomena, automatic machinery, explosions, guided missiles, hydraulic phenomena, deceleration tests to stimulate gravity pull, every field of entertainment and sport—even to recording the velocity of a baseball or a golf ball.

• • •

A 400-cycle magnetic signal-level test film, providing an absolute reference for the level of magnetically recorded signal, is now available from the Society of Motion Picture & Television Engineers. Film is designed for use by the 16mm equipment and sound recording industry as a basis for determining amplifica-

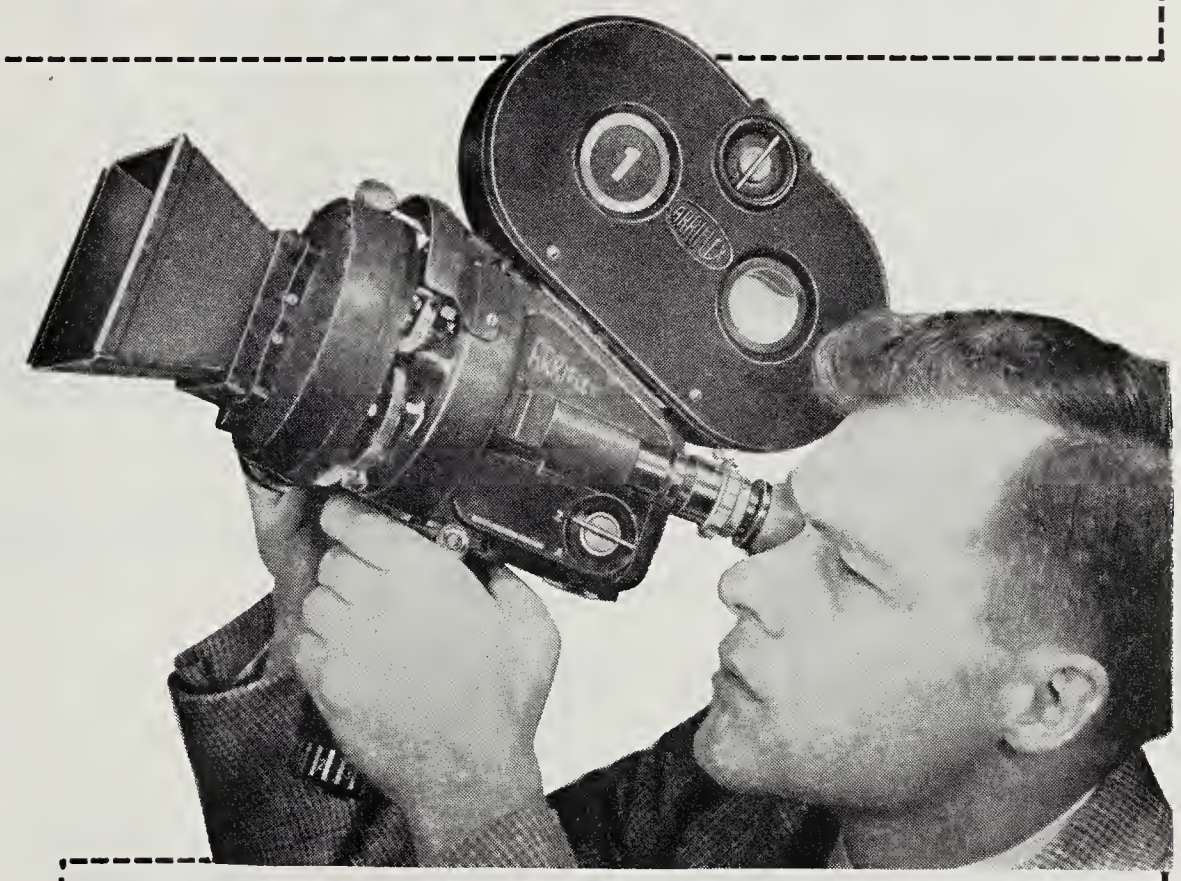
(Continued on Page 326)

May cost you less to <u>own</u>

than it costs to <u>rent</u> other equipment

ARRIFLEX 35

MODEL IIA



with soundproof blimp and synchronous motor . . .

For little more than the usual rental charges for equipment, you can own a complete Arriflex 35 Model IIA sound outfit, including the variable speed motor, Synchronous Motor and Soundproof Blimp. As a result, more and more studios and cameramen are recognizing this fact and are buying Arriflex.

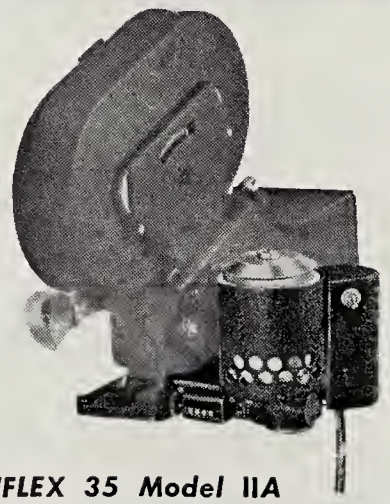
The Arriflex 35 Model IIA offers many advantages over other 35mm cine cameras. For example, without the Blimp and with battery-operated variable-speed motor, the Arriflex is an unusually light and easy camera to handle — ideal for location shots under the most difficult conditions — even for handheld filming. With the Soundproof Blimp and Synchronous Motor, it becomes the perfect camera for lip-synched sound — both in the studio and out.

The Arriflex 35 IIA features a **180°** Mirror Reflex Shutter for through-the-lens viewing and follow focus. A new type of intermittent mechanism with registration pin action assure absolutely rock-steady pictures in perfect register.

Many other improvements have made the Model IIA the most desirable camera in the field. In fact, every important feature you would expect in a camera designed for first rate filming has been incorporated in the Arriflex 35 Model IIA.

Write for complete information to:

KLING photo corporation
257 FOURTH AVE., NEW YORK 10, N. Y.
7303 MELROSE AVE., HOLLYWOOD 46, CAL.

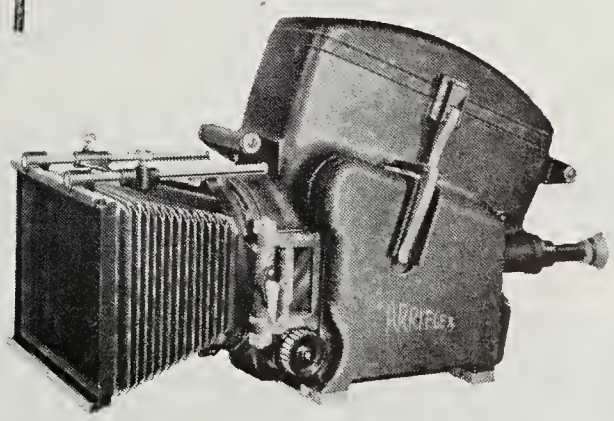


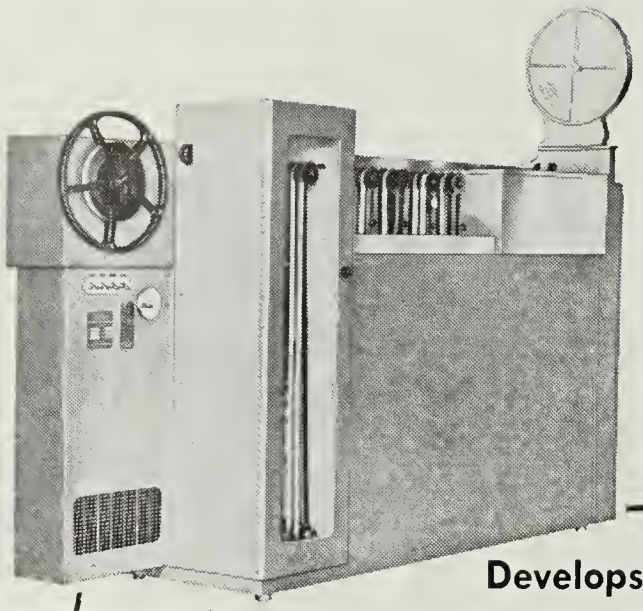
ARRIFLEX 35 Model IIA with SYNCHRONOUS MOTOR UNIT

Provides absolutely uniform and constant speed. Motor is mounted on base-plate housing containing gear mechanism which connects directly to main drive shaft of camera. Motor unit has built-in footage counter and tripod socket. Safety clutch automatically disengages motor should film 'jam'. Designed for 115-volt, 60-cycle AC operation.

ARRIFLEX 35 Model IIA in SOUND-PROOF BLIMP

Blimp housing is cast magnesium alloy, finished crackle black. Accommodates Camera, Synchronous Motor Unit and 400-foot Magazine. Internal walls are lined with corduroy velvet over six alternate layers of foam plastic and lead. Doors are sealed with foam-rubber gaskets, and close by means of heavy, 'knee-action' clamp locks. Camera is cushion-mounted.





FILMLINE

MODEL R-15 REVERSAL FILM PROCESSOR

Develops reversal film at 1200 ft. per hr. • Negative-positive film at 1200 ft. per hr.

★ **EXCLUSIVE OVERDRIVE** eliminates film breakage, automatically compensates for elongation; tank footage stays constant ★ **EASY TO OPERATE,** needs no attention ★ **VARIABLE SPEED DRIVE** development times from 1½ to 12 minutes ★ **COMPLETE DAYLIGHT OPERATION** on all emulsions, no darkroom needed ★ **FEED-IN ELEVATOR & 1200-FT. MAGAZINE** permits uninterrupted processing cycles ★ **STAINLESS STEEL** tanks, air squeegee, recirculation fittings, air agitation tube, lower roller guards ★ **FORCED WARM AIR DRYBOX,** uses no heating lamps.

- **Double Capacity Spray Wash**
- **Self-Contained Plumbing**
- **Uniform Tank Sizes**
- **Filtered Air Supply**
- **Cantilever Construction**
- **Size: 76" x 50" x 24"**
- **Ball Bearing Gearbox**
- **Weight: Approx. 475 lbs.**

Other models available. Write for literature.

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Film Briefs

Our **INDUSTRIAL MOTION PICTURE** division has beer expanding at a tremendous rate during the past two years.

F&B has completely equipped motion picture studios location units, editing rooms, projection rooms, etc for some of our greatest industrial organizations advertising agencies, labor and fraternal organizations, universities and government agencies.
Here's why they come to Florman & Babb—(as ho been reported to us by all these satisfied patrons).

1—**INTEGRITY**—No single item is ever recommended or sold you unless it has passed our own rigid requirements and tests—and is absolutely suitable for hard, day by day professional use.

2—**TECHNICAL KNOWLEDGE**—Our entire staff has a fully rounded technical background. You will receive the latest, most accurate technical information as it becomes available. You will be advised as to the best possible equipment for your needs, at your own budget requirements.

3—**SERVICE**—No sale is ever complete until you are satisfied. Whether new or used equipment, F&B not only guarantees performance, but is equipped for complete service and maintenance.

4—**COURTESY**—You'll find that we are always ready and willing to listen to your technical problems to take the time to discuss it with you in full detail—followed by definite recommendations and commitments.

5—**EFFICIENCY**—When the order is placed—all our resources are summoned in an effort to supply you with all possible speed and efficiency.

6—**ECONOMY**—Pricewise, F&B is always right there with regular professional discounts whereever they are allowed. We do not overcharge and on the other hand, we don't offer fantastic discounts to sell junk merchandise. Consequently, we can never be underbid on standard quality equipment—nor do we ever make a charge for all the other services outlined here.

Film Briefs

—FLASH—

Right now F&B needs lots of used equipment of all types and descriptions and we're willing to pay the highest prices for it.

Especially needed are ***Cameras,*** — Auricons, Arriflex Cine Specials, Mitchells—***Projectors,***—of all kinds—***Editing*** equipment—especially rewinds, synchronizers Moviolas—***Lighting Equipment***—Spots, Floods, Color trans and accessories.

This would be a good time to trade your surplus equipment for some of the new items you've been needing.

Film Briefs

We've decided to close out our 8mm department simply because you professionals have been keeping us so busy, we've no time or space for it. . . . So—if you want anything in 8mm cameras or projectors send us a note—or drop in . . . you'll find prices on that stuff have been cut to the bone.

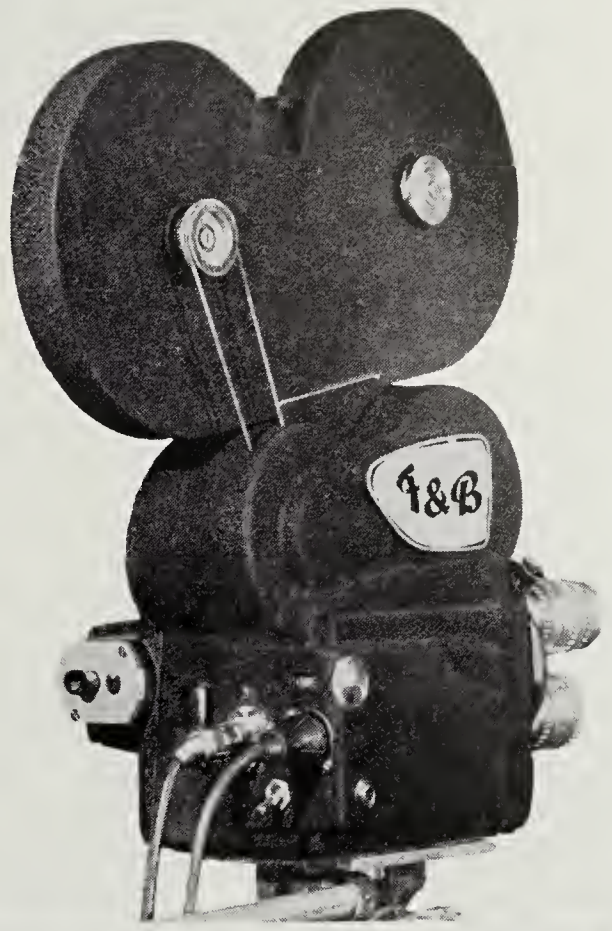
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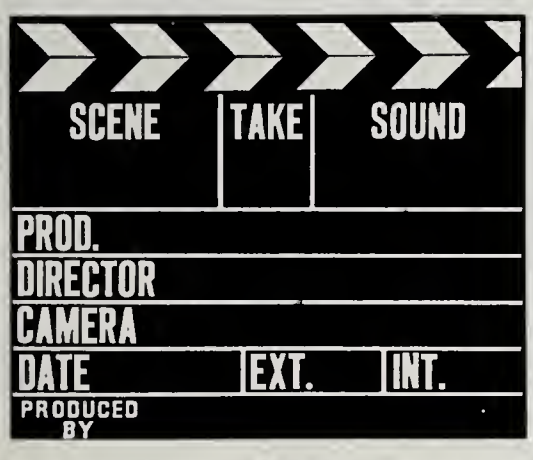
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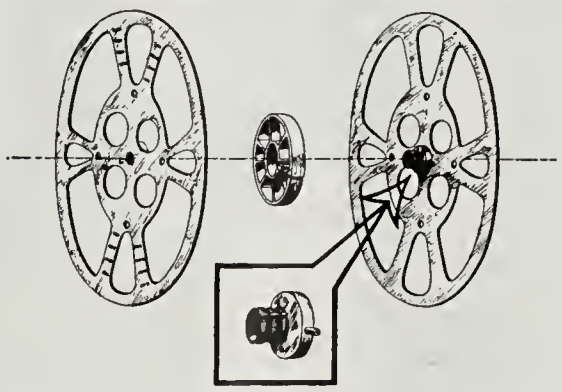
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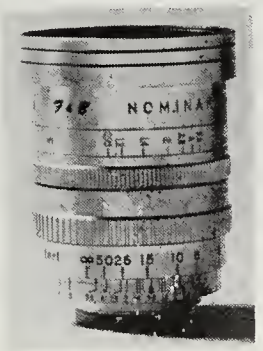
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MOBILE CAMERA SHOTS FOR "TH

How the dramatic and pictorial values of this powerful M-G-M production were enhanced through wide use of the moving camera.



LOW, UNDERSLUNG camera dolly used in photographing many exteriors for "The Fastest Gun Alive." Here a follow shot is made in closeup of actor Glenn Ford in horse-drawn vehicle.



WHAT CAMERA sees here is stage coach driver an his horses in a reverse angle, as coach obstensibl

AN UNEASY TENSION sweeps through Silver Rapids as three strangers ride into the small western town. The cruel arrogance of Vinnie Harold, the dissolute menace of his partners draw every eye to them.

Harold is looking for a man named Clint Fallon. "They say you're faster with a gun than me," are his first words when they meet. Moments later, Fallon lies dead in the street —outdrawn.

"On his headstone, I want it wrote that he was killed by me—the fastest gun there is," Harold tells the townspeople.

Cross Creek, some distance away, is a peaceful little town. but there is little peace within shopkeeper George Temple. A series of seemingly harmless incidents rile him further until his pent-up emotions explode. Bolting from his store, he heads for the saloon.

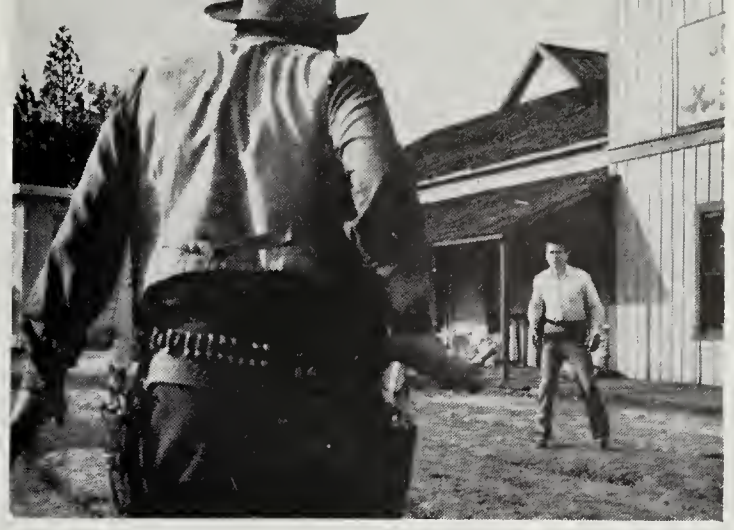
In his four years in Cross Creek, George has never taken a drink—nor carried a gun. So it was obvious to his friends that he must be drunk when he makes the derisive claim, "I'm the fastest gun alive!"

Their laughter is stilled, however, when George, running back to his store, returns with a gun—with six notches in the handle. Before their startled eyes, he puts on a shooting exhibition such as they never have seen, nor believed possible.

Later, George is explaining that he must go away—that the reputation of a fast gun will attract to the town and destroy it—every killer who fancies himself the fastest gun. when the arrogant Vinnie Harold and his two partners ride into town. It is in a strange duel that Harold learns he has a new rival, and an even stranger duel that takes place. Yet, the most startling of all is its aftermath.

The surprise twists that characterize the climax and end-

FASTEST GUN ALIVE"



By GEORGE FOLSEY,
President, American Society of Cinematographers



rives in small western town. Car serves dual urpose, conveying actors as well as camera.



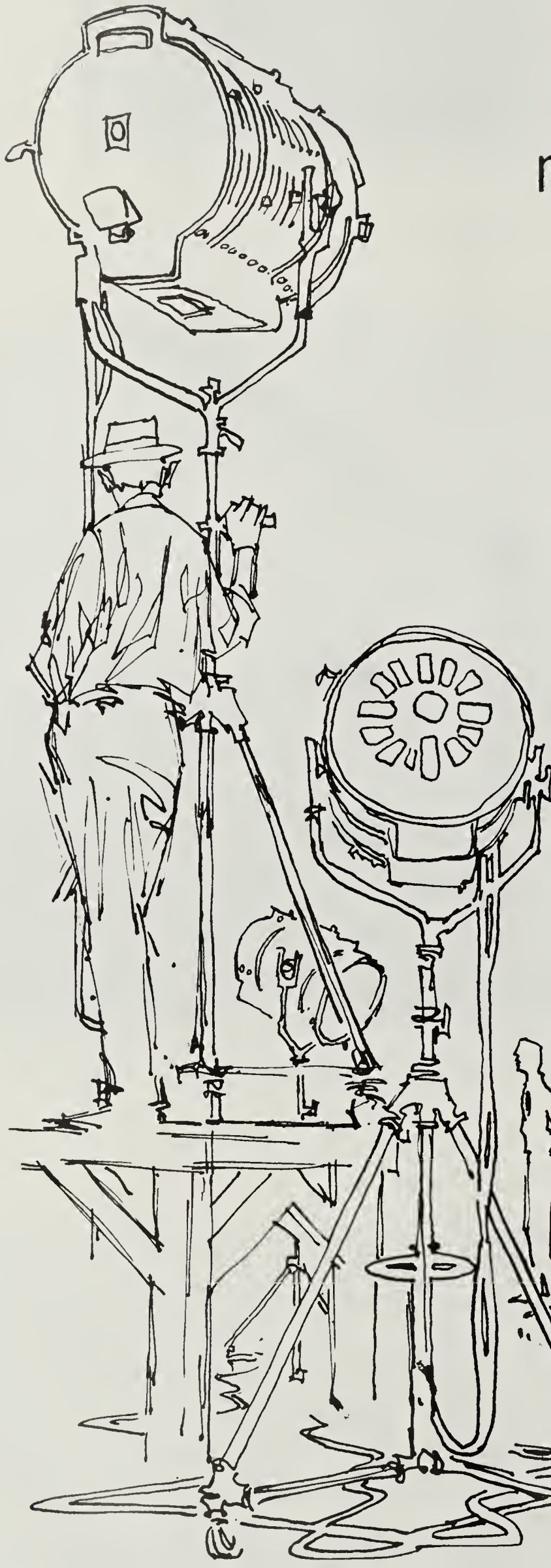
DRAMATIC FOLLOW shots and aerial zoom shots were made with the Mitchell camera mounted in helicopter. Supervising installation of camera is George Folsey, A.S.C., 2nd from left.

ing of this latest M-G-M screenplay preclude our revealing them here. But being an action drama, with most of the action staged out of doors—75% of the footage is exteriors —some interesting photographic procedure was involved. For one thing, few pictures made at M-G-M in recent years required use of the mobile camera to such an extent, nor demanded such a diversification of mobile camera units. These ranged from the familiar RO crane to a helicopter. The accompanying photos show the camera crew in action photographing some of the principle moving camera shots for "The Fastest Gun Alive," and using camera carriers of three different types.

The first photo shows a Mitchell camera with CinemaScope lens mounted on an underslung camera dolly. As may be seen, the dolly is large enough and sturdy enough to also accommodate the camera crew and a heavy arc lamp and stand used for fill or booster light. Although the lamp is on the same side as the sun, with relation to actor Glenn Ford, its illumination is sufficient to light up the shadow side of the player's face. The dolly is moved by grips to keep pace with the horse-drawn vehicle, while other grips walk alongside and keep the necessary power cables free from entanglement. An odd note here is the soundman riding a horse backwards as he holds the mike boom over Glenn Ford to pick up the dialogue. All concerned work as a smoothly integrated team toward the end that the resultant take shall be properly lighted, the dolly action smooth, and the mike or its shadow kept out of camera range.

The studio's recently acquired Chrysler camera car was put to good use in making the unique shot shown in the

(Continued on Page 318)



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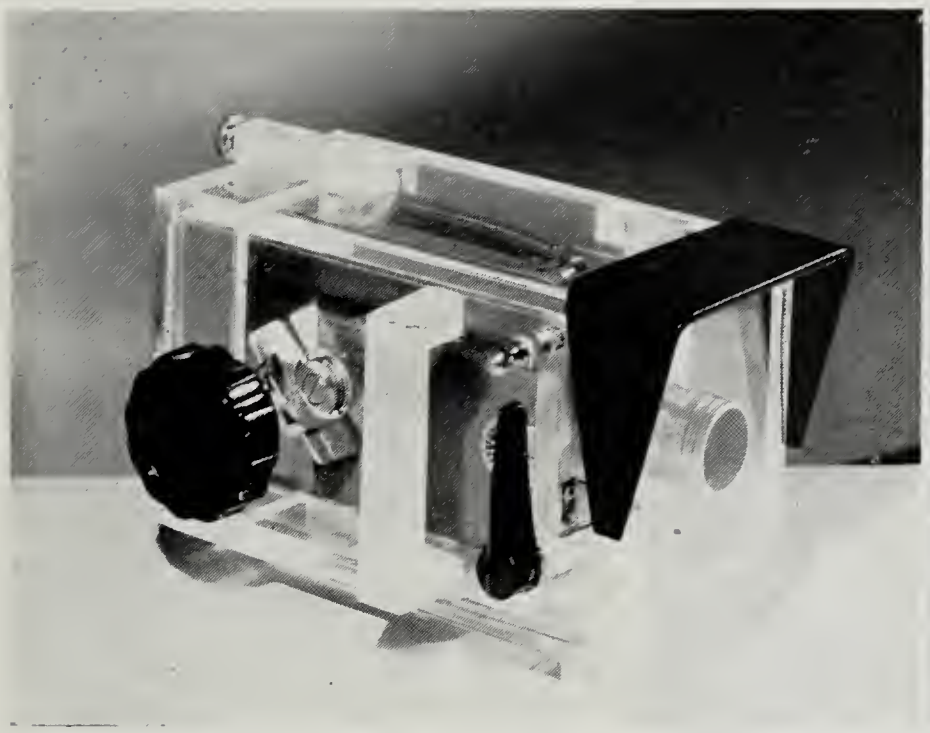
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ONE OF the many compact plexi-glass cases available for cine cameras, which now enable almost any amateur to make interesting movies under water.



JORDAN KLEIN, Florida underwater expert and designer of the Mako line of underwater blimps for 8mm and 16mm cameras. He holds aluminum case he designed for the 16mm Arriflex camera.

Plastic Blimps For Shooting Movies Under Water

Water - tight camera cases of plexi-glass, available for many cine cameras, make underwater photography a fascinating movie maker's hobby.

By RENEE LITTLE

WHEN THE FIRST motion picture was filmed under water. the camera went below surface in a photosphere from which trailed a hundred-and-one wiring connections. The site was off the coast of Nassau, B.W.I. Today, less complicated equipment affording greater mobility and range is used by both professionals and amateurs—the latter, enjoying a completely new field of cinematography, thanks to the ingenuity of Jordan Klein, underwater motion picture and still photographer and president of Underwater Sports, Inc., of Miami, Florida. Nationally known for his undersea work, Klein's research and experimentation led to the manufacture and marketing of a line of water-tight blimps or housings for 8mm and 16mm cameras. These have been a prime factor in bringing underwater cinematography into national prominence for professional and amateur movie makers alike.

Klein's Mako line of products also includes housings for still cameras. But it is the slick, easy-to-handle cases he has designed for 8mm and 16mm movie cameras, exposure meters and flood lights, permitting their use underwater, which are arousing great interest in photographic circles. Those who own the inexpensive 8mm Eastman Brownie Cine Kodak, for example, can indulge in underwater photography by investing an additonal $49.95 for one of Klein's plexi-glass watertight housings designed especially for this camera. Other housings are available for the Bell & Howell

(Continued on Page 316)



JORDAN KLEIN in action behind his blimped camera photographing a TV film on the ocean floor off coast of Florida. Accessories include exposure meter in water-tight plexiglass case and compressed air "breathing tanks" strapped on back.



THE SIMPLE TOOLS used by Australia's Catholic Film Productions are shown here: the 16mm Bolex camera plus groups of photoflood lamps mounted on portable floor stands. Here the Director, Father L. Ryan, runs a tape for author Father O'Shea (behind camera) for a scene for "The Brown Veil," photographed in 16mm color.

3,800 Feet Of Film In 20 Days

Some of the problems encountered by a small producer of 16mm religious films in Australia.

By REV. JOHN A. O'SHEA

TO SHOOT ENOUGH footage for a 45 minute documentary on the S.V.D. Missions in New Guinea within the short period of 20 days was the rather tough assignment given Director Leo Ryan of Catholic Film Productions, Melbourne, Vic. The result however was the excellent color film "Other Sheep Have I," which has already run to seventeen prints, and is rapidly making the work of the Missions known both in the States and "Down under" in Sunny Australia.

Catholic Film Productions was formed in 1950 by three Melbourne priests—Fathers Leo Ryan, John Perkins and John O'Shea—with a view to producing educational and religious films to fill a very real local need. In Australia, many of the Catholic Schools have their own 16mm projectors but the supply of suitable religious films is quite restricted. As a result the Fathers set about solving the problem by making their own.

For some years previously each had been working in the 16mm field, but quite independently. By amalgamating, they pooled their equipment, resources and experience. Though the personnel of the unit has at no time been greater than three, it has already produced twelve films totaling 10,000 feet. Shooting and editing is done on their free day each week, while their mission films are shot on location during their annual vacation. Sound tracks are recorded by a Melbourne laboratory.

Camera equipment consists of an H-16 Bolex and a 16mm Pathe Webo. An ex-army tripod with a Miller fluid head is used for heavy duty work, and a Bilora tripod where extreme portability is a necessity. Editing is done with the aid of two Ferquin Viewers, and a Premier synchronizer. Sound and image are run on the one Bell & Howell projector as a final check. Having acquired a synchronous motor drive for the Bolex, plans are being made for the first lip-sync production.

What really put C.F. Productions on the map was the colossal Catholic Life Exhibition held in Melbourne during June '55; 238,000 people passed through its doors in the nine days, and more than 40,000 were accommodated in the theatrette to see the nineteen films screened daily, eleven of which were C.F. Productions, three made especially for the Exhibition.

Their most successful film to date has been "Other Sheep Have I." Shot entirely on location in the jungle mission stations of the Wewak Vicariate of North Central New Guinea, this film produced by the "Flying Bishop"—Very Reverend Leo Arkfeld (Panama, Io.) and directed by Leo Ryan (Melb. Vic.) tells the story of the commencement of work in this difficult region at the turn of the century, its total destruction during the recent Pacific war, and the zealous work done by the American and European Fathers and Brothers to rebuild it in the post-war years.

Director Ryan's biggest difficulty apart from shortage of time, was the lack of electrical supply on the majority of mission stations. With only four weeks at his disposal for the entire assignment, one week of which went in travelling to and from the Territory, he had to can 3,800 feet of film in 20 days. Although the production was in regular Kodachrome, there was no possibility of waiting for the best sun, or even for the sun at all, which not only made

(Continued on Page 324)



ON LOCATION in North Central New Guinea, the author photographs scenes for a sequence for "Other Sheep Have I."

Closed-circuit Print Inspection Aid To TV Film Photography

By PHILIP TANNURA, A.S.C.

Director of Photography, "The Burns and Allen Show"

TO APPRECIATE the full value of closed-circuit projection facilities for TV film prints—a new lab service of particular interest to the directors of photography who film these pictures—it is necessary to view this development as a normal. almost inevitable evolution of progressive laboratory operations. As with many contemporary industrial achievements, this new service did not suddenly spring into being. Its appearance today is a result of past technological accomplishments.

Why is this new closed-circuit system important? When should it be utilized? And just what is it all about? Let's take it from the beginning.

Inspection of television release prints via conventional projection methods has long been regarded by many cameramen as inadequate. These men have maintained that an unbiased critique of quality cannot be made unless TV release prints are observed "in their element"; namely, over a vidicion tube —not on a conventional motion picture screen.

Consolidated Film Industries in Hollywood believed that this argument had some merit. In fact, they believed it strongly enough to have installed special closed-circuit viewing facilities for the benefit of interested clients and their cameramen. CFI's equipment operates in its new 16mm building where it has been utilized by scores of producers, directors, film editors, agency representatives, and—of course—Directors of Photography. The lab considers its closed-circuit installation as part of a customer-service program and no charge is made for normal usage.

Here, then, almost under our noses, is a new electronic device that can be used as a valuable tool by discerning cameramen. In fact, CFI's closed circuit unit has proven its usefulness to cinematographers time after time by permitting inspection of dailies and first trials under actual telecast conditions. Such a screening indicates photographic characteristics of a televised film almost exactly as that print will be seen on the home receiver. Obviously, a screening of any TV release print under conventional projection room standards cannot compare to the "field test" results of actual closed circuit viewing.

CFI's installation uses two rooms: one glassed in projection booth housing most of the electronic equipment and the other, a viewing room containing a 17" receiving unit and chairs, tables, smoking stands, etc.

In operation. a DeVry projector accommodates 16mm film with either optical or magnetic track. An RCA Vidicion camera, utilizing a 1" tube, is rigidly mounted on the same platform that secures the projector to assure precise optical alignment. A specially-designed 5" control monitor contains the synchronizing and deflection circuits, video amplifier and power supply. Completing the projection booth equipment, this monitor is engineered specifically for closed-circuit operation on a 525-line 30-frame interlaced television system.

In the adjacent viewing room the receiving unit couples to the control monitor and permits the viewing of 16mm prints on a 17" monitor tube, which is comparable in size to the screen in a standard home set.

Reception quality of sound, in addition to picture, is virtually identical to home set sound reception. To Hollywood's TV film cameramen the advantages of CFI's closed-circuit installation are threefold:

1. It provides an accurate standard for judging TV film dailies.
2. It establishes an excellent basis for critical evaluation of TV film releases prints under actual "field" conditions.
3. It enables all interested parties to convene quickly and conveniently at a center of film technology—the processing laboratory—where experienced technicians are available to offer expert film advice.

Alert craftsmen are always on the lookout for new tools or techniques they can use to good advantage. And according to the impressive reports, closed-circuit print inspection is an aid that deserves serious consideration by every conscientious TV film cameraman. **END.**





CLOSED-CIRCUIT viedo system recently installed at Hollywood plant of Consolidated Film Laboratories, which affords review of TV films as they are seen on television. In background is 16mm projector and the electronic recording camera which picks up the picture image and relays it to review monitor at right, and to the individual customer's preview monitors, one of which is shown in photo at right. Speaker and audio controls are in separate unit on table at right of monitor.



FIG. 1—The distortion problem inherent in wide angle lenses is basically the same no matter what wide screen process is used. Horizontal and vertical line distortions can be minimized if not eliminated entirely through careful camera placement with relation to the lines, or by choosing a location for the action having no clearly defined lines—as in the outdoor scene above.

Wide Angle Problems In Wide Screen Photography

Greater understanding of the virtues and limitations of wide angle lenses can do much to increase the effectiveness of their use in wide screen cinematography.

By GAYNE RESCHER, A.S.C.

WHEN THE SCREEN opened up for the first time on Cinerama's roller coaster a new era was born in motion pictures.

Producers rushed their research departments to find ways of widening the standard screen, and today we are presenting all shapes and varieties of wide screens to the bewildered but interested public. Somewhere along the line, however, we may have forgotten what started all this; we may have lost sight of the quality of wide screen that first intrigued us.

The Cinerama roller coaster sequence owed its effect not so much to the width or curvature of the screen as to the extreme wide angle with which it was photographed. The feeling of participation — which is really the only added dimension of Cinerama—is there only when wide screen is combined with wide angle and with movement. And yet the use of the wide angle lens with the various wide screen processes has been discouraged — in many cases by the very studios that developed the process — because of the problems of distortion. Some studios, after a few unfortunate experiences, have recommended that no wide lenses be used for wide screen photography. But this policy deprives them of one of the main advantages of wide screen — putting the audience into the action.

The distortion problem is basically of the same nature no matter what wide screen process we are dealing with. It depends mainly on the angle of field covered by the lens. Obviously, the wider the angle of field, the greater the distortion.

While the problem is basically the same, there are variations with each process which I will not attempt to cover here. My purpose is to show the nature of these distortions rather than describe them in detail. We are therefore assuming in the following discussion that the projection

setup is such that the projectors are level with the screen (as in Cinerama) and that no corrections have been made during printing, (As is possible with Todd AO).

Let us assume that we are photographing a set of straight horizontal lines with an extreme wide angle lens. When projected, the center line will be the only line that remains straight. Lines below the center will bend upward as they approach the edge of the screen while lines that are above center will bend down in a similar manner. This bend becomes more pronounced the closer we get to the top and bottom of the screen. (See Fig. 3). When thinking in depth we might say these lines bend back into the screen.

Now while this is a basic distortion, the straight line running through the center (let's call it the line of no distortion) may vary in its position due to the projector-screen setup or other factors peculiar to the process in which we are working. This line of no distortion could easily be above or even below center; so photographic tests similar to the one described above are advisable.

Now suppose we were to repeat the same test but instead of photographing the lines straight on we shoot them at a 3/4 angle. We will find that the bend will hardly be noticeable and certainly not objectionable. The greater the angle from straight on, the less the lines will bend. (Fig. 4).

From the foregoing we can see a number of ways to help ourselves when we wish to use an extreme wide angle lens on a scene containing pronounced horizontal lines. The most obvious, of course, is to keep horizontals in the center of the frame or wherever the line of no distortion happens to be. Unfortunately this is not always possible or desirable.

A less-obvious but often simple solution is to set up the camera so that the prominent lines in the scene are bent in the opposite direction, so that on the screen they will appear straight. When thinking in depth, it can be remembered that horizontal lines off the center bend back into the screen, therefore, these lines should be bent forward (toward the camera) an amount determined through the ground glass. (Or, on paper, if it is a question of set design.) I worked on a picture recently in Cinemascope in which it was necessary in one setup to use a 35mm lens. The scene was a building with a roadway running straight in front of the camera, and the tops of three park benches in the foreground. The far curb of the road ran straight and was close to the center of the frame, but the near curb ran across the screen in a pronounced curve, making a rather strange looking road. We blocked the benches up slightly to cover the nearby curb, and, leaving the center bench straight, we angled the outside benches toward the camera. When seen on the screen, the tops of the benches ran reasonably straight and parallel to the opposite side of the street.

Where possible, the easiest solution in a case of this kind. is merely to change the setup so that any lines in the upper or lower part of the screen become diagonals. In the scene just described, had it been possible to move the camera so that it was three quarters to the road, we would have had no problem.

Still another possibility — and one we had to resort to often with Cinerama — is to break up these lines by blocking them at some point. A floating piece of shrubbery is ideal for this — anything that will keep the eye from seeing the full length of that bent line. Of course, many lines look perfectly all right if they bend. A railroad track bending through the bottom of the screen may look perfectly natural, except when the train comes through and the cars bend in the middle!

If we repeat our line distortion test with vertical lines instead of horizontals and tilt the camera we will see the second basic distortion. The center line again runs true but the other lines are displaced off the vertical more and more as they approach the edge of the frame.

Once again the wider our angle of field the more pronounced this will be. There is another distortion present in some systems which further affects verticals as they approach the extreme edge of the frame: the bending of lines

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FIG. 2—Example of well-placed camera setup for wide screen photography. Here distortion of the straight lines of the highway is minimized by shooting at a three-quarter angle.

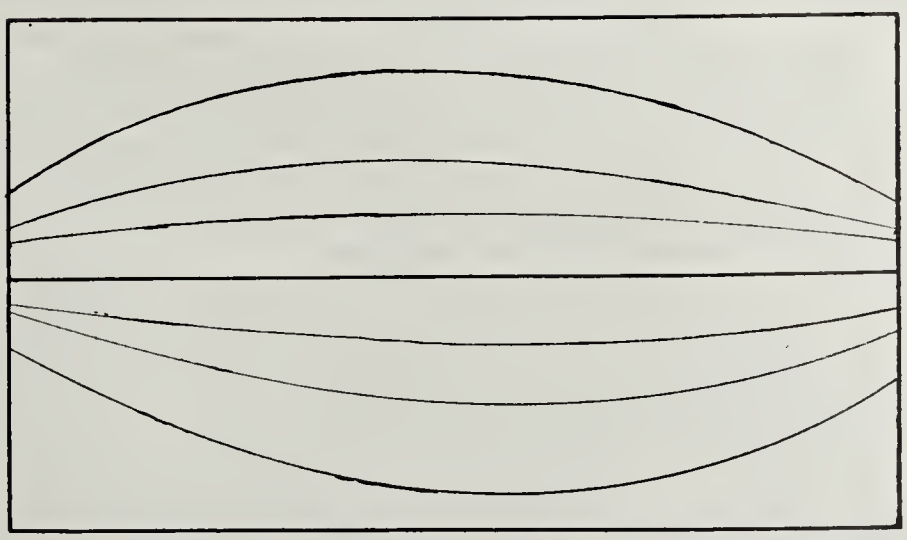


FIG. 3—How horizontal lines are bent when scene containing them is photographed straight on with extreme wide angle lens.

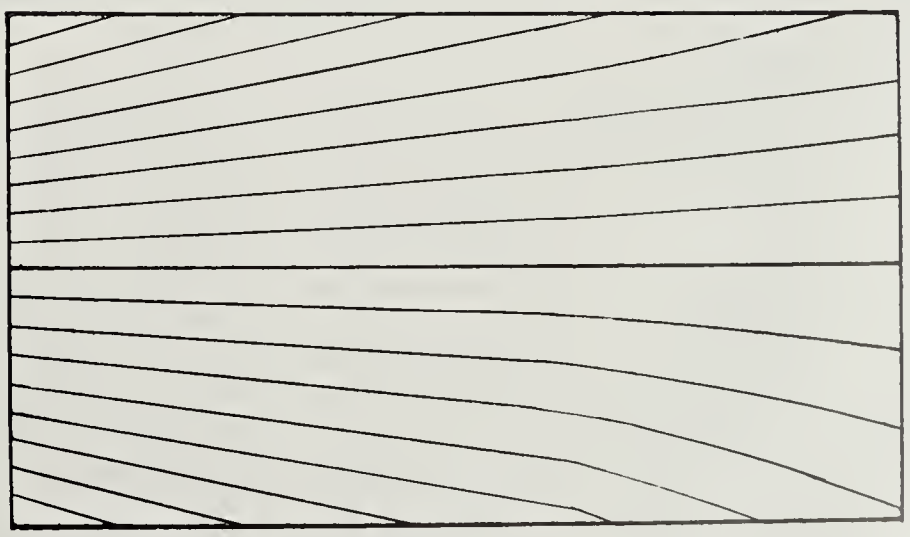


FIG. 4—When the same scene is shot with the camera placed at a three-quarter angle, the horizontal lines are bent only slightly.



NEW CAMERA has shuttle-type movement with fixed pilot-pin registration, plus rack-over for animaition work.

The New Oxberry Combination 35mm/16mm Process Camera

May be converted in five minutes from 35mm to 16mm for either animation or optical printer work.

By VERN W. PALEN

A NEW COMBINATION 35mm - 16mm process camera, specifically designed to meet the most critical requirements of animation and optical printer work, has been announced by The Animation Equipment Corporation, New Rochelle, New York.

Actually two cameras in one, the Oxberry unit is quickly converted from 35mm to 16mm merely by changing the lens, shuttle, sprocket assembly and magazine. Use of the camera for both film sizes eliminates the need for critical realignment as required when two cameras are employed on an animation stand or optical printer. Similarly, the camera can be supplied initially for use with either 35mm or 16mm film. Later, accessories can be obtained to accommodate the other film size.

The camera has a shuttle-type movement with fixed pilot pin registration. It has a rack-over mechanism for animation work. A socket drive accommodates portable and stationary stop-motion motors.

A hand dissolve mechanism on the front of the camera has a linear scale calibrated in 16 frames and 24 frames for cross dissolve (DX). The shutter may be set and locked at a designated opening such as ¼ shutter, ½ shutter, etc. Shutter opening is 170 degrees.

An automatic dissolve is operated through a dial selector on the side of the camera and has a range from 8 to 80 frames. Since the camera can be set quickly for dissolves of 8, 9, 10, 12 or any number of frames, this saves time on TV commercials and makes it unnecessary for the operator to leave his floor position. A two-position switch controls and indicates shutter position as to DX-in or DX-out. Camera dissolve action is started by a control button located on the control panel. When the correct number of frames are exposed, the dissolve mechanism disengages automatically.

The front of the animation camera is built to receive 35mm or 16mm Oxberry lens mounts. There are two available, one for hand focussing that is calibrated in feet and inches. The other is for automatic follow focus. It is a spring-loaded no-play mechanism, ball-bearing mounted with a straight-line in and out movement for maintaining the optical center.

On the rack-over camera for 35mm film a 47mm focal length lens is used. A 25mm focal length lens is employed for 16mm film. On the rack-over camera, the shortest back focus of any lens cannot exceed 17/32 in.

The shuttle-type movement with fixed pilot pin registration provides positive action and rigid position during exposure and the special spring-loaded pressure plate will accommodate three negatives without adjustment. Shuttle is machined from a solid steel block having cast steel yokes with hardened faces. A standard silent film aperture is provided. A new feature permits it to be changed with other size apertures such as film strip, sound-on-left and sound-on-right. Apertures are quickly changed by merely removing four screws on the front of the shuttle. Shuttles are matched accurately for both film sizes to assure optical alignment.

The entire cam shaft is cut from one piece of steel and on it are three cams which activate the shuttle. One cam comes into play when the 35mm shuttle is inserted; another cam performs a similar function when the 16mm shuttle is used. A barrel cam operates the pressure plate on both.

Two rack-over systems are provided. One is operated by a lever which activates a no-shock movement that positions the view-finder directly over the lens. The other rack-over is controlled by an indexing knob which accurately shifts the camera to the correct location for sound on left or right and for exact

(Continued on Page 319)

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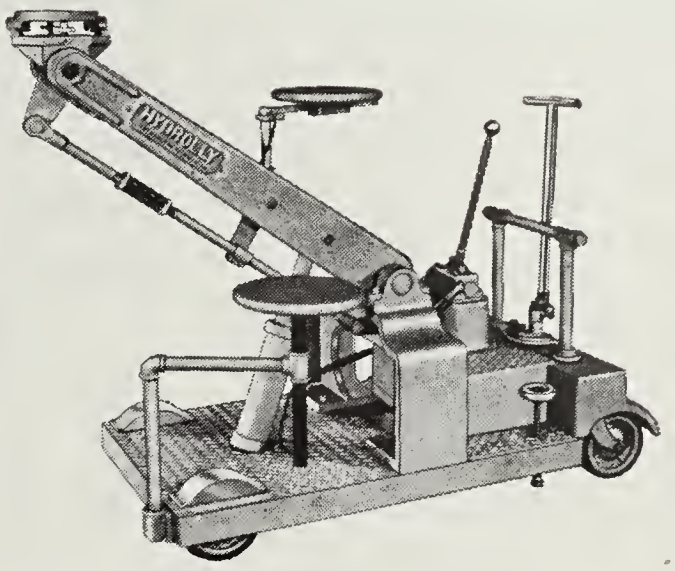
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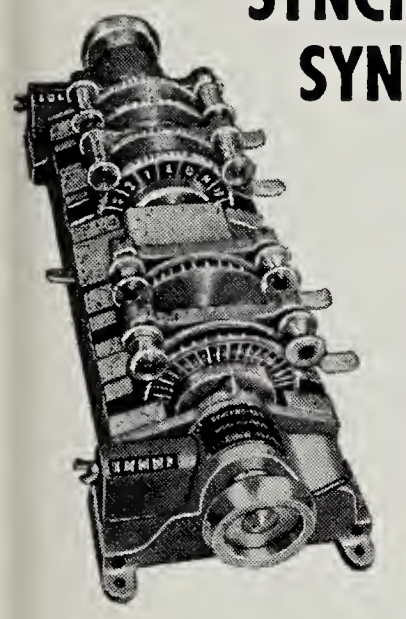
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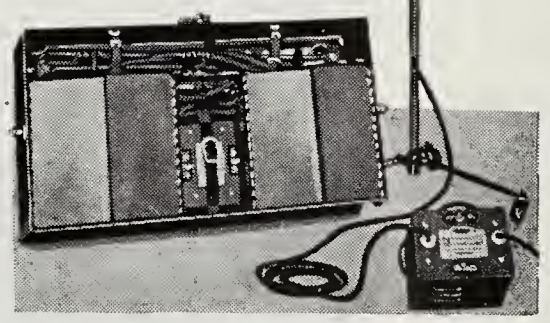
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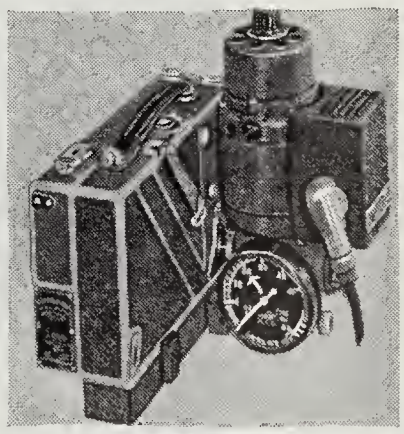
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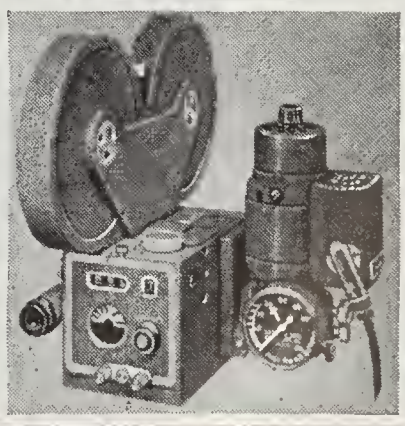
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Better Business Films, Faster

How to overcome one of the big bottlenecks in 16mm business film production by streamlining the script writer's procedure and increasing his efficiency and output with mechanical devices.

By TOM HOTCHKISS

PRODUCERS OF 16MM business films are complaining of "writer's cramp." They say they can't find enough skilled creative writers. Dearth of good writers in the field of the fact film appears to be one of the big bottlenecks in the industry.

It's another indication of the mushrooming growth of audio-visual media, emphasizing the overall needs for new trained members for the big and growing team of film makers.

The Society of Motion Picture and Television Engineers, Hollywood chapter, is conducting a course in "Elements of Sound in Motion Pictures," as one concrete effort to anticipate future personnel needs in that phase of production, and industry leaders are said to be planning similar courses covering other aspects of film making.

Manpower can be trained for most departments of motion picture production. Writers, however, seem to be born —not made—and the immediate answer to the problem seems to be: s-t-r-e-t-c-h the available pool of writing talent. This can't be accomplished successfully with an anamorphic lens, but there are ways to multiply the efficiency of nearly any script writer for industrial and educational films, perhaps double it.

Writers have generally failed to gear themselves to the accelerated tempo of the other areas of film production. Even in many production companies otherwise up-to-date, writers still function in a primitive, rustic manner, working in the midst of an ultra modern industry of new, technological advances.

Observing their methods, it is little wonder that these cloistered script writers are signalled out as the bottleneck in certain production companies. Their cumbersome systems of coordinating words to pictures exhaust needless days of precious "writer's time." A typical mode of operation may find the writer working between his sanctum and a review room. He runs the picture, makes notes, goes back to his bailiwick, repeating this routine time after time. When finished, his script seldom fits picture well enough to record narration without frenzied last-minute re-writing.

Films Afield, a small company of writers devoted exclusively to scripting for the 16mm business and educational screen, has successfully avoided this sort of extravagance of time by "mechanizing" its writers.

Problem confronting us: How to hand a writer a cut workprint, let him sit at a desk and, without roaming around, turn out a reasonably completed script, with scenes, timing, and text all assembled, ready for final editing and typing?

We harnessed our writers by developing a "writing cube," complete with synchronous projector and screen, with a counter for footage and time. The writer sits at an ample desk, working with typewriter or pencil. All controls are at his fingertips. He can forward, reverse, or stop the projector and its coupled footage-time counter.

It is here, in one consolidated operation, that the writer lays out his script, noting scene and time at the left, and sketching out his basic script on the right of the page. In many cases, by running the projector back and repeating a scene several times, he may actually bring the narration for that scene into final form the first time through the picture.

(Continued on Page 315)



TIME-SAVING shortcut proposed by author is to provide script writer with projection and recording facilities right in his own office. Here a Bell & Howell "202" magnetic recording projector is used for recording tentative narration on a business film work print.

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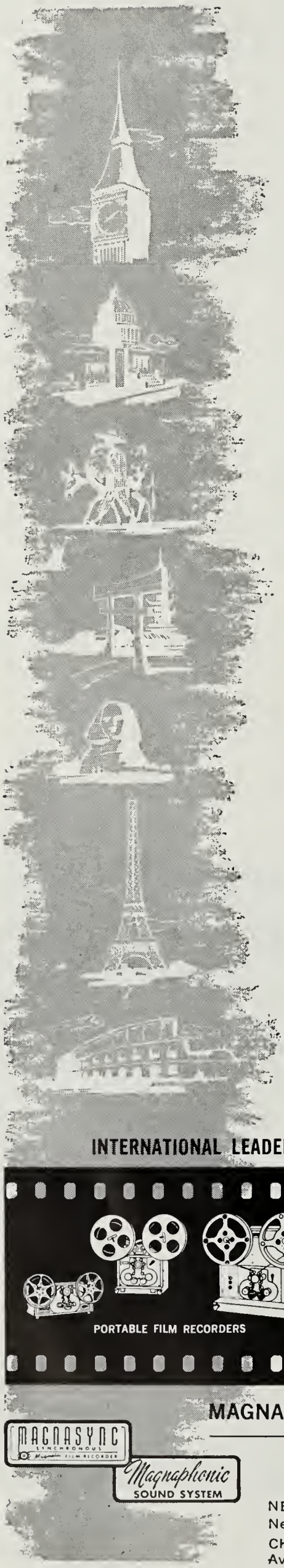
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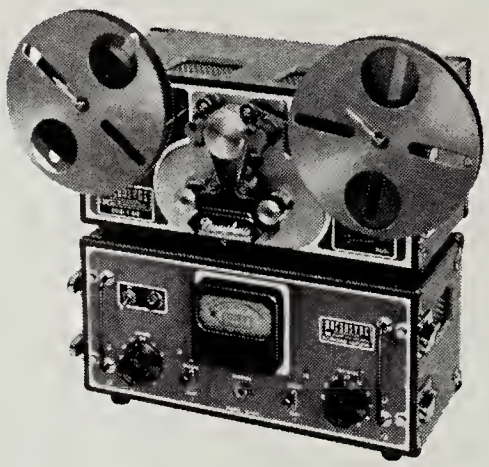


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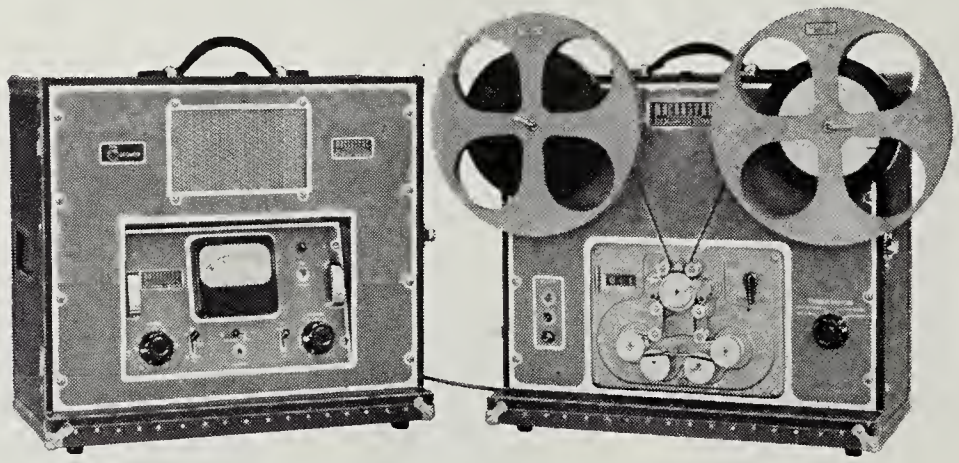
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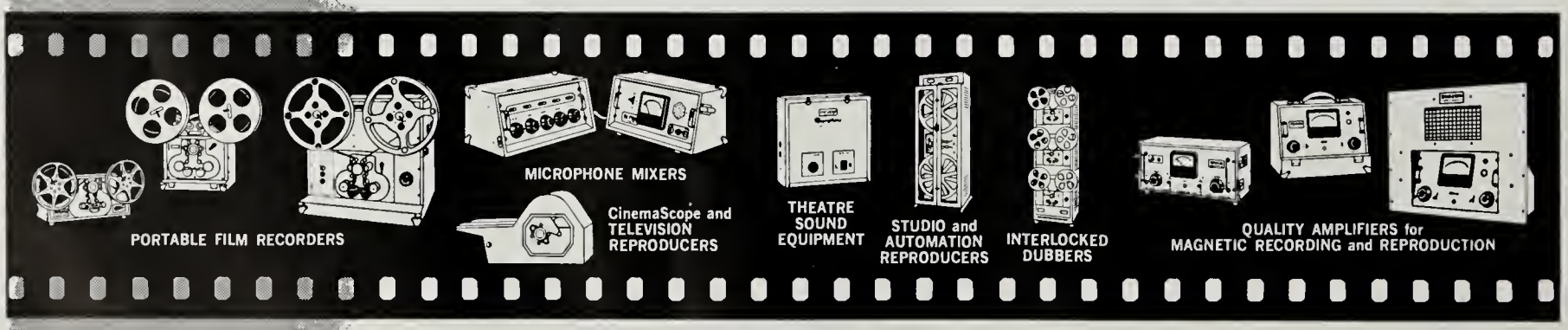


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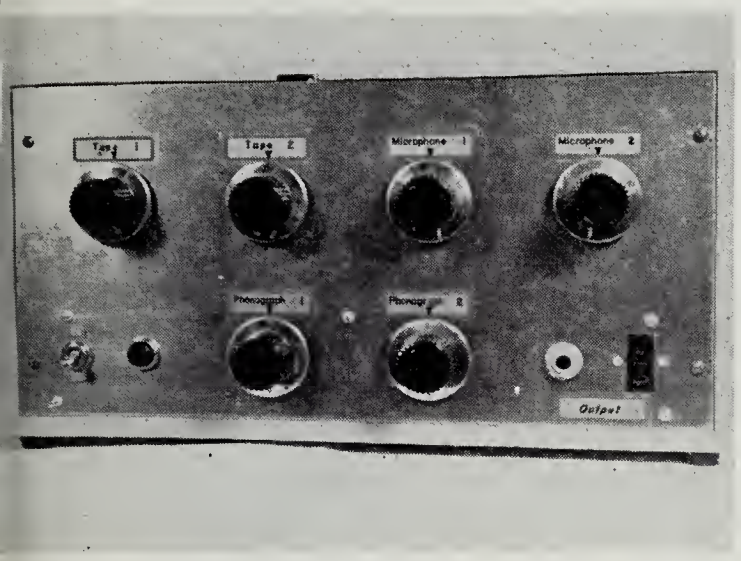


FIG. 1—Front view of author's Multiple Input Electronic Audio Mixer, showing neat arrangement of controls affording easy manipulation.

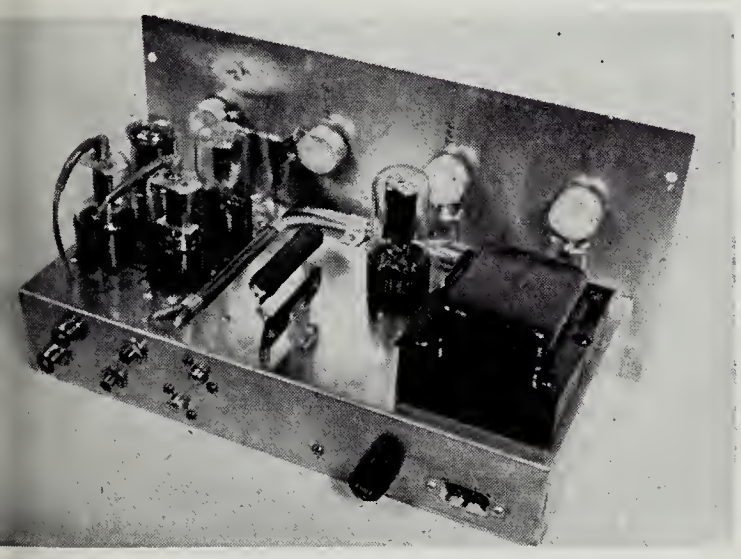


FIG. 2—Rear view. Tubes and other chassis-mounted components are laid out for efficient circuit disposal and to afford shortest possible length of input leads.

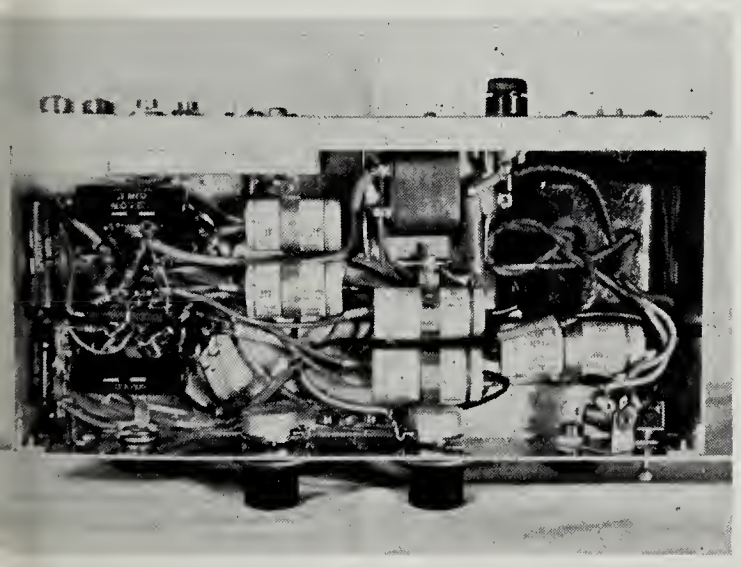


FIG. 3—Bottom view. Heavy wires are single-conductor shielded microphone cable, as noted in text of article. The shielded input is seen in upper left-hand corner of chassis.

Multiple Input Electronic Audio Mixer For Magnetic Recording

By DAVID D. BULKLEY

THE SERIOUS AMATEUR cinematographer rarely considers his films complete unless they have musical accompaniment and more than likely spoken commentary also.

Great technical strides in the magnetic recording art now provide the amateur with several means of obtaining synchronized sound accompaniment for motion picture films at a moderate expenditure in time and money. The more important means available to the amateur are: magnetic tape, stroboscopically synchronized (Revere "Synchro-tape") or mechanically synchronized (Tape recorder and silent projector mechanically connected by a flexible drive shaft) and magnetic striped sound-track-on-film, for projection on a magnetic sound projector (Bell & Howell, RCA, etc.). There also is an inexpensive magnetic sound adapter, the recently perfected "Cine-Sone," manufactured by the Foto Corporation of America, 40-27 24th St., Long Island City, N. Y., which may be easily attached to any 8mm or 16mm projector, and which projects magnetic-striped 8mm or 16mm film.

No matter what medium is used, the recording procedure is the same. The various musical selections must be inserted at the proper places in the film and must be blended as one musical selection concludes and the next commences. If a spoken commentary is used, each portion must be inserted at its location in the film and the music level must be reduced at the correct time. If sound effects are necessary to the film, they must be inserted and mixed with the music and commentary to round out the sound track. It is often desirable to record portions of the commentary, music and sound effects on a separate magnetic tape which is then cued and combined with the final sound

(Continued on Page 312)

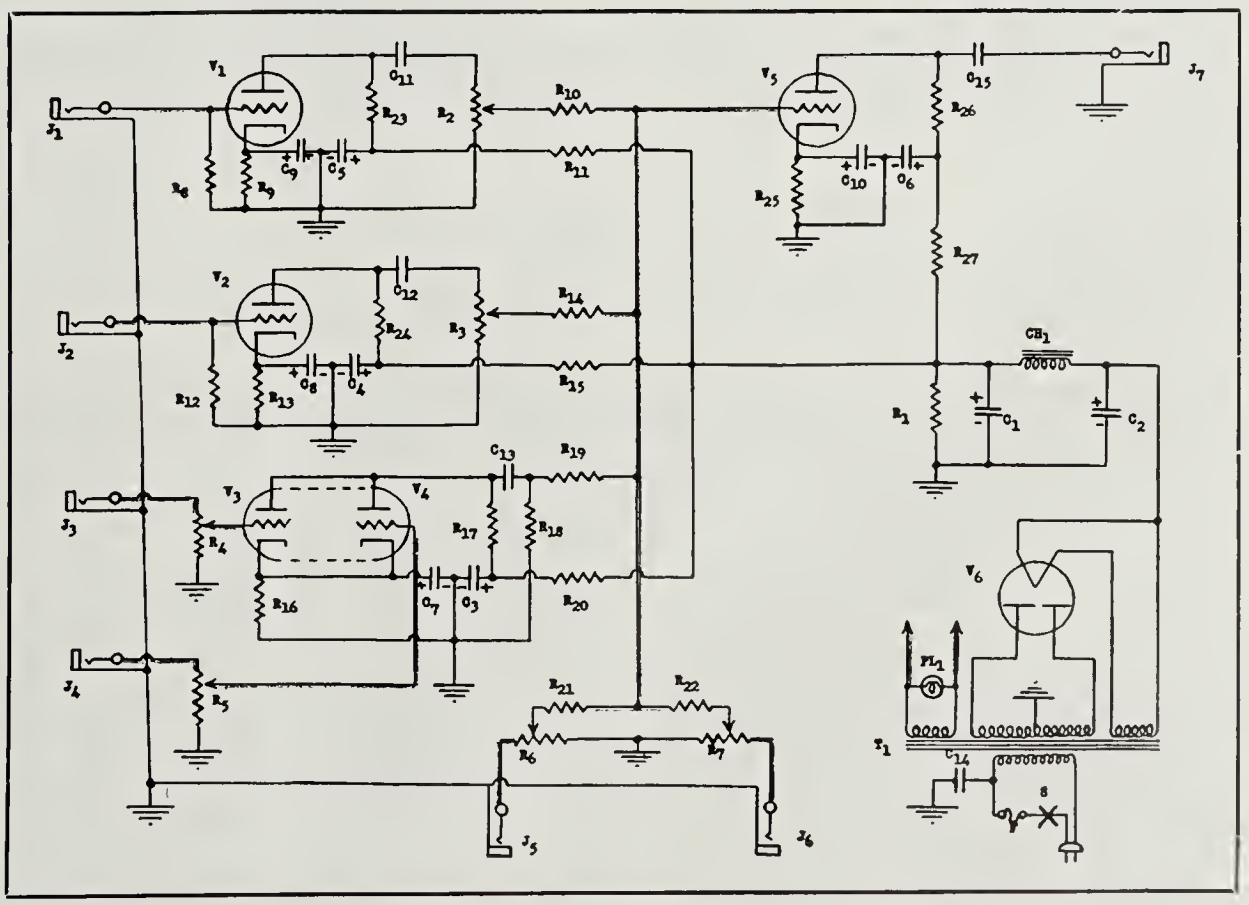


FIG. 4—Circuit diagram of the Multiple Input Electronic Audio Mixer. Heavy lines indicate shielded wiring. (Diagram by author.)



PRESSING THE BUTTON is the simplest part of making movies. But the films with enduring interest are those based on a plot—an interesting story line. This, then, is where you really start to make movies.

Home Movie Plots Are Where You Find Them

News items, cartoon strips, and magazine short stories offer a wealth of ideas for your film scripts.

By HAROLD BENSON

THE WEATHER'S perfect, the camera's loaded and your finger's itching to press the button. The only thing that's lacking is a plan. The sun's out before you've got around to scriptwriting, and there's not a filmic idea in your head.

Don't imagine your alone. It's a common enough cine affliction. But if you recognize it as an affliction, you're already on the way to recovery. Too many amateurs in this situation dash out and shoot without plan or purpose.

"It'll all sort itself out on the cutting bench," they mutter as they make the most of the sun. Somehow, though, it never does; and the final result is almost invariably several hundred feet of uncut, useless footage stored away under that tactful classification, "Stock Shots."

But however late you've left your preparations, there's one source of inspiration which never fails. Go through a single newspaper looking for plot ideas and you'll have enough material to keep you filming for the rest of the year.

Here's an example of what one page can hold, taken from the issue that's just flopped onto my mat. These items aren't complete synopses in themselves, of course, but a little imaginative pondering can soon transform them. The questions in brackets suggest the most rewarding angles to follow in adapting each news item.

A. "Men Fight in Divorce Court." (Why? What was the woman's reaction? How did it end?) B. "Student She Would Not Wed Killed Model." (What made her refuse? How does he feel now?) C. "Six Months For Wounding Poacher." (What is the landowner's story?) D. "Play Withdrawn After Five Performances." (Who put up the money? What are their plans now?)

There's one great danger in tackling scripts in this way. Unless you're careful your plot line can degenerate into a series of gimmicks, each added for effect rather than for its relevance to the situation. After all, newspaper stories are bound to have a certain freakishness about them. It's only out-of-the-ordinary happenings which make news.

You can safeguard your plots against the unforgiveable sin of contrivance by restricting yourself to subjects and situations which seem to you to have an important significance. In other words you should always feel *moved* to make a film, whether it be romance, drama or even comedy.

It's not enough merely to believe that your subject has the makings of a good film. You must have something to say, something to communicate about that subject. This is where your treatment of such items as those outlined above is of vital importance.

Reading the four stories below the headlines you might be (A) appalled at the woman's behaviour, (B) moved by the hopelessness of the student's infatuation, (C) indignant at the landowner's callousness and (D) amused at the blow dealt to the conceit of a businessman who financed his own play. If so, you already have the basic material of two dramas, a love story and a comedy.

But perhaps none of these stories hold any real interest for you. Turn the page of the newspaper, and you're confronted by the comic strips. Nothing here that could make a film? Nonsense! Strip cartoons can frequently suggest not only stories but camera angles, compositions and even editing juxtapositions which heighten the excitement of a narrative.

The most rewarding strips for the silent film-maker are those which use no words, for here the visuals often correspond astonishingly close to a sketched shooting-script, like a story board. The light-hearted day-to-day domestic cartoons can suggest dozens of amusing incidents for a family comedy.

The strip before me, for instance, shows a young wife trying on a new dress. She dashes into the bathroom to show it off to her husband. He responds by blindly groping

(Continued on Page 318)

CLOSE YOUR EYES...dream into our picture all the brilliant, living colors you can imagine...



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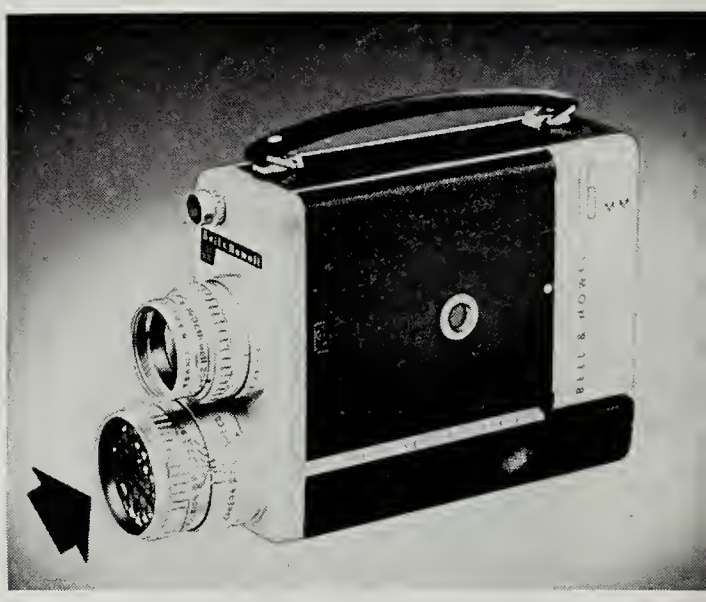
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NO MATTER WHERE you put the lights, on a stand or on the camera, your subjects can move about freely and you'll still get perfectly-exposed movies with the new Bell & Howell automatic camera with the "electric eye" that continuously adjusts the lens diaphragm for correct exposure.



ARROW POINTS to "electric eye" that "reads" the light and automatically sets the lens diaphragm.

Bell & Howell Introduces First Automatic Movie Camera

Built - in "electric eye" automatically adjusts the lens iris to varying indoor or outdoor light conditions for a wide range of film speeds.

By JOHN FORBES

A CINE CAMERA with an electric eye which automatically sets the lens for perfectly exposed movies has been announced by Bell & Howell Company Chicago.

The lens of the new model 200-EE, a 16mm magazine camera for the amateur, operates on the same general principle as the human eye. A photo-electric cell, or electric eye, opens and closes the lens iris automatically to adjust to varying indoor or outdoor light intensities. This solves the trickiest problem of movie making, the difficulty of determining the proper exposure. For the first time the complete novice can press the starting button and shoot movies, confident that his film will be properly exposed.

Although several European cameras have built-in coupled exposure meters, they require that the user manually adjust the lens iris until a pointer in the viewfinder matches with an index mark. In contrast, the 200-EE lens iris *moves itself* automatically to the proper opening and continues to do so whenever changing light conditions require it.

Another "first" is the camera's ability to signal the photographer when the light becomes insufficient for good movies. A warning flag remains in the viewfinder until there is adequate light for proper exposure.

"Automating" movie making is only one of the 200-EE's contributions to photography. Because the lens adjusts to changing light during filming, the photographer can follow a subject from deep shade to bright light without stopping to change the exposure, a feat virtually impossible with any other camera. For example, children at play may run from sunshine to shade. At a baseball game the batter may be shadowed by the grandstand, while first base is bathed in sunlight. A swimmer may emerge from the water and head for a beach umbrella. As the camera follows the action, the lens automatically accommodates itself to the changing light at the rate of one f-stop per second.

The 200-EE is a completely automatic camera. But it is also fully versatile and may be operated without the electric eye

to deliberately under-or over-expose a scene for special effects.

For simplest operation the camera can be set at ASA 10 and 16 frames per second, the most commonly used film and camera speeds. (The photographic dealer will lock the camera barrel in this position, if desired. It can be unlocked at any time.) The lens can be set at universal focus for most shooting. However, the camera is automatic at any camera speed or ASA film rating.

The 200-EE takes quick-loading magazine film. Drop in the film magazine, aim the camera and shoot by pressing the starting button inward and down. (Pressing *inward* momentarily before pressing down sets the lens *before* any film is exposed. Then as you press down. the iris control will continue to change the lens setting as the light changes.) Your film (either black-and-white or color) will be properly exposed as long as there is sufficient light for photography.

If you wish to under- or over-expose a scene for special effects, the photoelectric cell may be deactivated. To determine the proper exposure, press the starting button directly inward until the lens stops turning. This operates the automatic exposure control without exposing film. Then deactivate the control and set the lens for the desired under- or over-exposure. The iris motor control current may be deactivated by pressing the starting button down by sliding a fingernail in the release button groove. This exposes film but avoides the slight inward thrust which activates the iris control in normal use.

The use of Mylar iris blades for the first time in a motion picture camera offers the latest in advanced improvement in optical iris construction. Because they are corrosion resistant, not affected by temperature or humidity change and, in effect, inert, they are extremely durable and precise.

The fast 20mm f/1.9 lens has a focal length of about 4/5 of an inch. The shorter focal length (compared with the conventional one-inch lens for 16mm cameras) offers two important advantages:

(1) The lens has more inherent depth of sharpness.

(2) It covers a wider angle of view, "sees" 56% more of a given scene than a one-inch lens.

The lens is carefully adjusted to the particular camera on which it is permanently mounted.

A 2½-X telephoto attachment gives the equivalent of a 2-inch f/1.9 field, and a 0.63-X wide angle attachment gives the equivalent of a ½-inch f/1.9 field.

The viewfinder objective is interchangeable so that a standard Bell & Howell 2-inch objective may be used with the telephoto attachment and a ½-inch objective with the wide angle attachment.

The life of the six tiny batteries which operate the automatic exposure control is equivalent to 175 fifty-foot film magazines, or a year if the camera is used only occasionally. Replacement batteries may be purchased from Bell & Howell photographic dealers at a cost of about $3 for a set of six.

(Continued on Page 326)



THIS SERIES CLIPPED from 16mm film illustrates the light-adjusting qualities of the new Bell & Howell 200-EE camera.
The frames in the strip at left were taken from a sequence shot with a conventional camera. Faced with changing exposures in a continuous scene, the photographer set his lens midway between the lightest and darkest areas, illustrated by the properly exposed frame at the bottom. The preceding frames are under-exposed and the following frames (not shown) are over-exposed.
In the strip at right, taken with the 200-EE camera, the lens automatically set itself at the beginning of the sequence and adjusted for the gradually increasing light as the camera followed the subject. All frames are properly exposed.

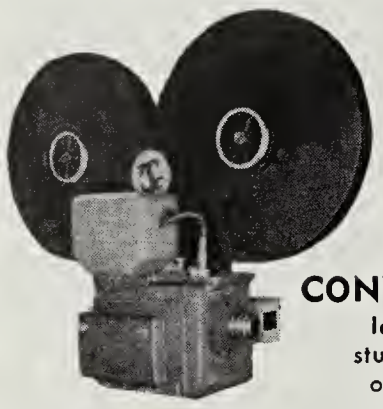
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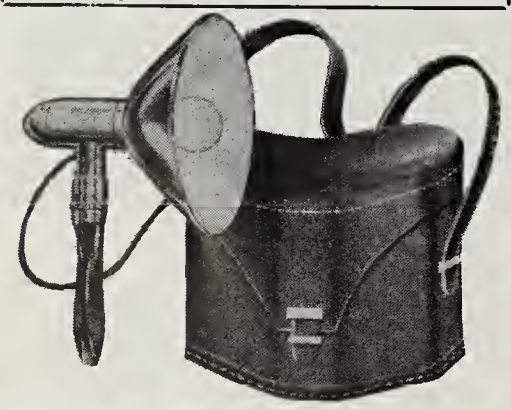
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ELECTRONIC MIXER

(Continued from Page 307)

track. This latter procedure provides an efficient and split-second means of inserting specially recorded portions at the exact spots they are needed in the film.

These operations may sound like an imposing and complex task, but they become a simple procedure when a flexible, properly-designed audio mixer is used. An audio mixer consists of a means of adjusting the individual volume levels of two or more audio inputs so that several sound sources may be combined or "mixed" at the output to achieve an organized and properly balanced blend of the desired sound for recording as the sound track.

Various types of mixers are available which provide facilities for different applications. The simplest type is what might be called an 'electrical' mixer which consists of several potentiometers (volume controls) connected in parallel. This type leaves much to be desired for it is not only inefficient but capable of accepting only inputs of similar levels. Additionally, it frequently is prone to interaction between inputs. The more elaborate type of mixer contains vacuum tubes that provide efficient isolation and proper input and output impedance match. Those available commercially often lack sufficient inputs; they are also rather expensive. The electronic type of mixer is, of course, the most desirable one to use for mixing operations.

The mixer unit described here provides the home movie sound recordist with a complete instrument for efficient blending of a number of different audio inputs. It employs conventional vacuum tubes and simple straight-forward circuits and has a self-contained transformer-operated power supply; it offers virtually the ultimate in a dependable, rugged, inexpensively constructed unit, and one which almost any reader who follows the diagram and instructions, can put together himself.

In the interest of flexibility, six audio inputs are provided: two high-impedance microphones, two tape recorders and two high-impedance phonograph pickups. An output designed for matching various tape recorders or magnetic sound projectors assures high quality sound recording. All inputs may be operated simultaneously with no interaction whatsoever and each individual input may be varied independently of all others. No master output volume control is provided inasmuch as the sound track recording level is normally adjusted on either the tape recorder or magnetic projector prior to recording.

Figure 1 is a general view of the front panel of the mixer showing the neat, well-balanced appearance with controls disposed for easy manipulation. The six volume or gain controls are easily identified. The on-off power switch (S_1) is on the lower left with a small pilot light (PL_1) next to it. The output plugs are in the lower right hand corner. Two types of output plugs are connected in parallel: a standard phone plug and a Jones type socket, although the latter may be omitted if not needed.

Figure 2 is a three-quarter view of the rear and top of the mixer chassis. The power supply is on the right with its power transformer (T_1), bleeder resistor (R_1) and rectifier tube (V_6) visible. The left side of the chassis contains the two 6F5 GT (V_1 and V_2) microphone input tubes on the rear edge, the 6C5 (V_3) output matching tube on the left adjacent to the panel while the 6SN7GT tape recorder input tube, a dual purpose tube (V_4 and V_5) is to the right of the 6SN7GT. The rear of the chassis contains the two microphone connectors (J_1 and J_2) at the left (these can be replaced with phone jacks if that type of connector is more convenient), two phone plugs for the tape recorder inputs (J_3 and J_4) next to the right, followed by two phonograph input jacks (J_5 and J_6). The a-c input connector is mounted at the extreme right with the line fuse next to it.

Figure 3 is a bottom view of the mixer showing the general wiring layout. Neat, logical layout of wiring results in compactness and ease of access during construction.

Audio equipment is, generally speaking, less critical as to constructional layout than equipment operating at radio frequencies. However, certain precautions should be observed to assure a hum-free, clean, crisp output signal. Inasmuch as this unit operates with comparatively low-level audio signals, all signal-carrying circuits are wired with shielded wire.

Although this mixer was constructed with a vertical front panel, it could very easily be replaced by a sloping front "console" type of panel such as is used for public address equipment.

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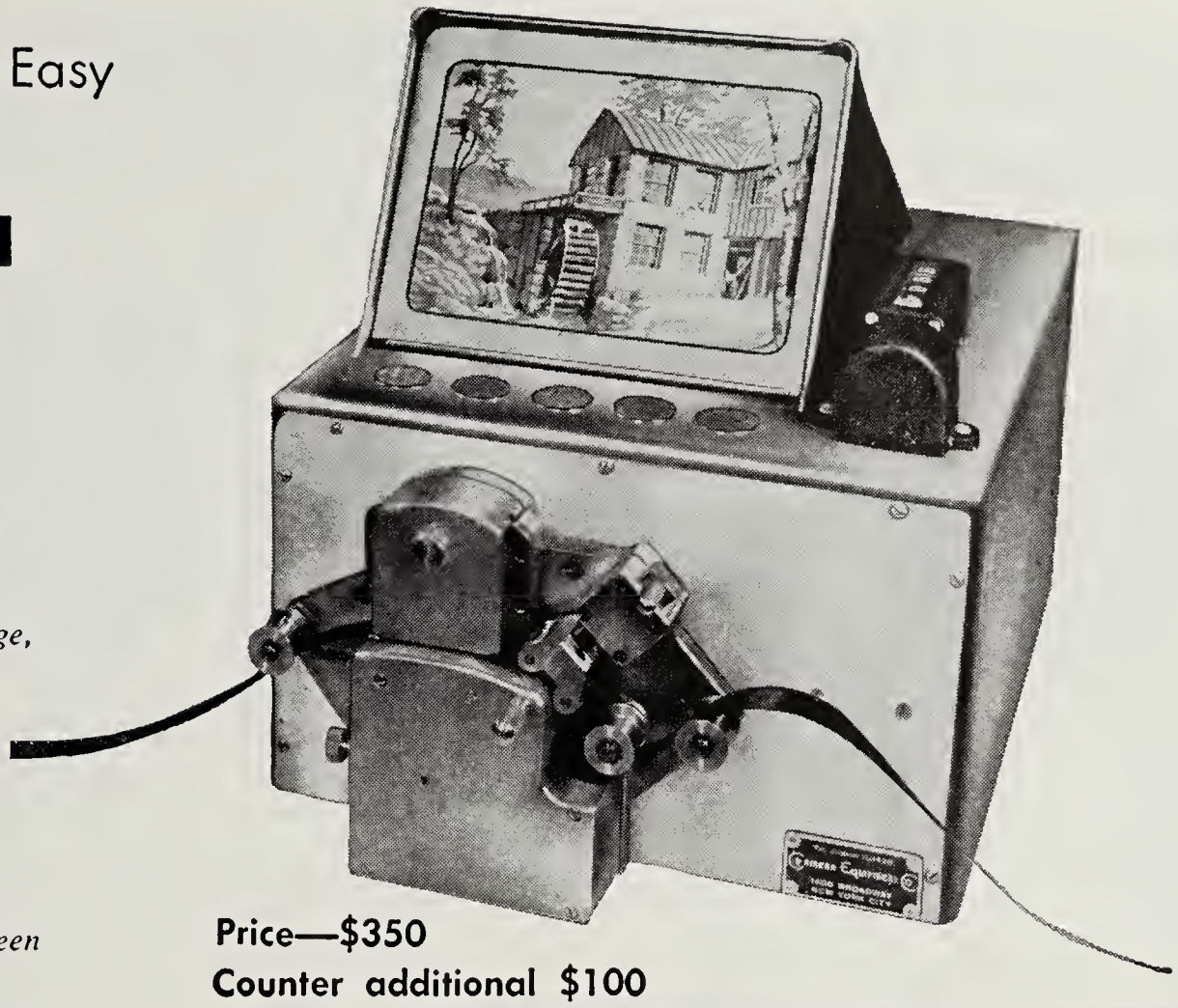
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Layout of the various gain controls, on the 12 x 6 inch aluminum front panel, is left to the constructor's requirements and desires. The top and rear portions of the chassis may be laid out on an aluminum chassis 11 x 5½ x 2 inches, approximately as shown in Figure 2.

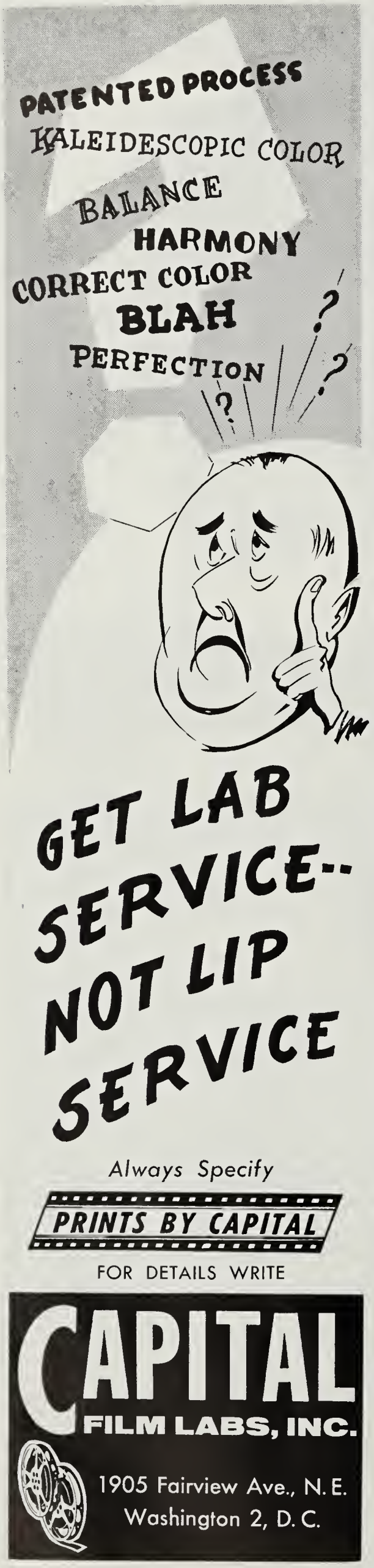
Wiring is very straight-forward and components should be soldered in place neatly and securely, using a hot soldering iron and rosin-core solder. Where possible, the capacitors should be mounted on the chassis with the brackets supplied, resulting in more rugged mechanical construction. The power supply bleeder resistor (R_1) is mounted on a bracket, off the chassis and away from the tubes, for this resistor becomes warm during operation.

Here an important point must be stressed: single-conductor shielded microphone cable is suggested for all leads shown shielded (enclosed by dotted lines with ground symbols) in the schematic diagram.

When wiring the electrolytic capacitors into the circuit, make certain that the negative or minus (—) side of the capacitor goes to ground.

Ground connections are made to insulated terminal brackets which are connected to the chassis at only one point. This will eliminate any possibility of spurious low frequency oscillations being generated which might

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record as "hash" on the magnetic sound track.

After all wiring is completed, double-check each lead to make certain that all connections are correctly wired and are securely soldered in place.

The power switch may now be turned on; all tube filaments should light reasonably promptly. A pair of earphones may be plugged into the output phone jack for test purposes. Each microphone input may then be tested with a crystal or other high impedance type of microphone. Next, test each tape recorder input in a similar manner by plugging in any standard tape recorder to the appropriate input. Use a good pre-recorded tape for this test. Finally, test the phonograph inputs by using phonograph turntable(s) with crystal type pickup(s). Low level (variable reluctance, etc.) pickups may be used with this mixer but require their own individual pre-amplifier stages. Such pre-amplifier stages were not incorporated in this mixer as their addition would have made the unit more complex than necessary; pre-amplifiers are ordinarily mounted on the same panel with the dual-turntables so they may be close to the low-level phonograph pick-ups with which they operate.

After all the individual inputs have been separately tested, several inputs may be connected and the blending or mixing of several inputs may be checked.

The mixer is now ready for application to all recording tasks at hand. It will be found that the mixer will provide flexible, smooth-as-silk operation with excellent audio quality, well within the recording capabilities of the various magnetic recording mediums for which it was designed.

The writer would like to thank Martin E. Robertson for his assistance in the construction of this mixer, and for his valuable assistance in making the necessary tests to ascertain the full capabilities of this instrument.

PARTS LIST
For
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R_8, R_{12}	—3.9 meg.	½ watt
R_9, R_{11}, R_{13}	—22 K	½ watt
R_{15}, R_{20}, R_{25}, R_{27}	—100 K	½ watt
R_{23}, R_{24}, R_{10}, R_{14}, R_{21}	—560 K	½ watt
R_{22}, R_{18}, R_{19}	— 1.5 K	½ watt
R_{16}	— 47 K	½ watt
R_{17}, R_{26}	—100 K	20 watt Ohmite "Brown Devil"
R_1	—500 K	potentiometer—Mallory "Midgetrol"
R_2, R_3, R_6, R_7	— 50 K	potentiometer—Mallory "Midgetrol"
R_4, R_5		

C_{11}, C_{12}, C_{13}	— .1 mfd. 600 v. paper
C_{15}	—.02 mfd. 600 v. paper
C_{14}	—.01 mfd. 200 v. paper
C_7, C_8, C_9, C_{10}	—10 mfd. 50 v. Sprague "Atom" midget electrolytic
C_3, C_4, C_5, C_6	— 8 mfd. 450 v. Sprague "Atom" midget electrolytic
C_1, C_2	—16/8 mfd. 450 v. Sprague "Atom" midget electrolytic, dual electrolytic
CH_1	—Filter Choke 8 Henry 75 ma. Stancor C 1355
T_1	—Power Transformer 520 v. 90 ma CT Stancor PC 8404 5 v. rect. 6.3 v. 3a. fil.
J_1, J_2	—Amphenol 75-PC 1 M Microphone Chassis receptacle
J_5, J_6	—Shielded phono. pin jacks
J_3, J_4, J_7	—1 CA type 1870 miniature phone jacks
J_8	—Jones flush type chassis socket type S 303 AB w/Jones plug P303 CCT (may be omitted)
S_1	—On-off toggle switch
PL_1	—Dialco Series 810 6 v. pilot light assembly w/"blue bead" bulb
F	—Buss HKP fuse mount (Type 3 AG 125 v. fuse 2 amps.)

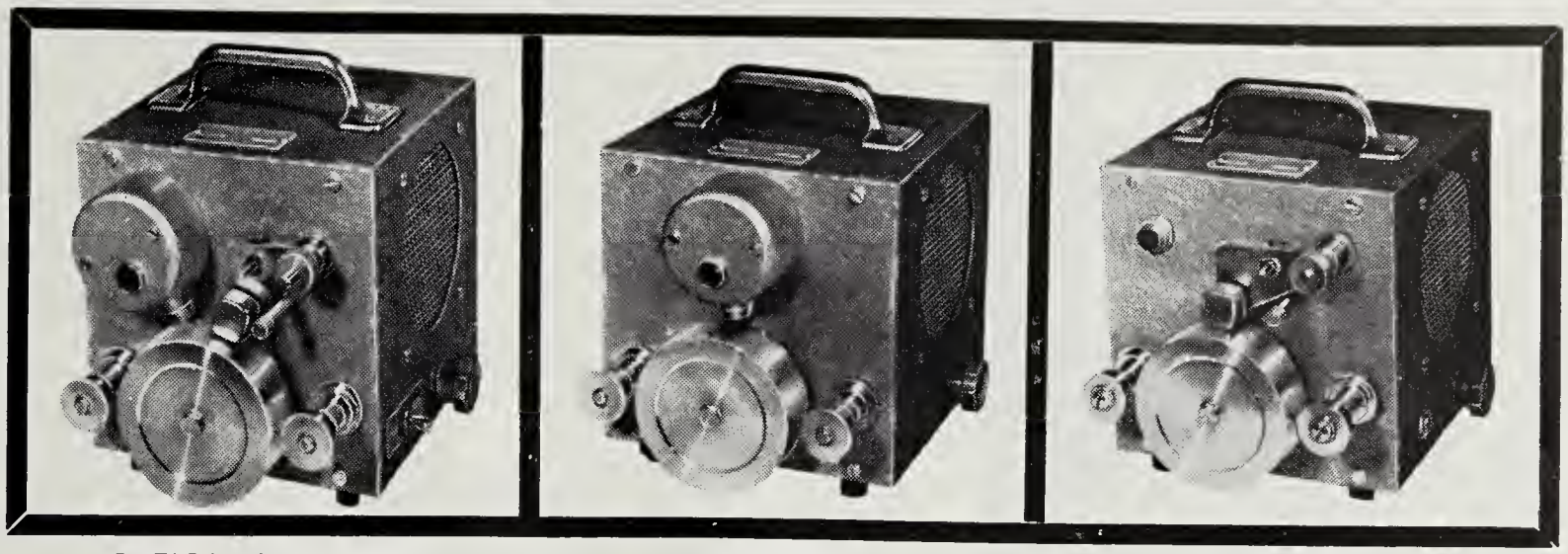
1—Power cord and flush mounting male chassis connector
6—National Type HRS-3 knobs o-10, 300°
5—Octal tube sockets
2—Tube grid caps

Vacuum Tubes:

V_1, V_2	2—6 F 5 G T
V_3	1—6 S N 7 G T
V_4	1—6 C 5 G T
V_5	1—5 Y 4 G T

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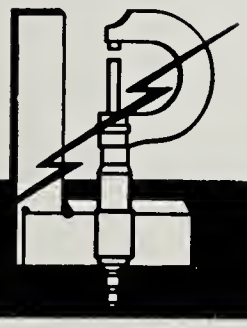


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BETTER BUSINESS FILMS

(Continued from Page 304)

He not only gets exact timing and footage, but by seeing the picture as he writes, he is able to key the script very closely to important sections—something very important in many films. Later re-writing time is saved, because the writer can make sure his script is neither too long nor too short for a given scene. Producers are amazed to find that words and pictures "sync" so perfectly the first time the narrator reads the script.

Portable tape recorders have proved invaluable for reducing script writing time. Frequently, we are faced with writing highly technical training films. With the workprint in its final cut form, we run off the picture and stop it after each scene. Then, a panel of experts supplies the scene description and technical data required. We proceed through the film, scene by scene, recording the salient points to cover each shot. As one company executive said, "Only a writer can say it right," so these tape recorded comments, double-checked by experts for accuracy and terminology while they are recorded, are edited and re-written for smooth readability by the writer. *(Continued on Next Page)*

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In this case, the writer uses an additional control for starting, stopping, and reversing a ¼-inch tape recorder. He views a scene on the screen, stops the projector, listens to the taped description; repeats the operation as required. In this way, at one sitting, he may produce a finished technical film script which might require days if written by traditional methods. Re-writing and correcting are almost precluded, and in most cases the script is ready for recording as delivered.

This "writing from tape" system affords maximum speed. Scripts for all types of 16mm films have been turned out by this method, from travelogue pictures to medical movies.

Taped comments may be rambling and loquacious, but they provide all the skilled writer needs for the finished narration script. Experience proves that picture information secured by the tape method is much more complete than when it is supplied in written form, and those assigned to the job of assembling such information all agree that the tape system is far easier than organizing the material on paper. Proper pronunciation is also determined on the tape, something that must always be checked later, before recording, when the technical information is supplied in writing.

Many 16mm producers are living the myth that writers' temperaments are incompatible with all the mechanical contrivances of film making, and that they must be sheltered from anything as boorish as a time-saving mechanism. Not so! Any writer suited for scripting business films will welcome liberation from a primitive status. He will produce a greatly increased volume with fewer headaches for himself and everyone else when the "mechanical revolution" comes belatedly to his craft.

PLASTIC BLIMPS

(Continued from Page 297)

Model 200 magazine cine camera, the Eastman Cine-Royal, the Bolex H-16, and for the Arriflex 16mm and 35mm cameras.

Klein's underwater housings for cameras, meters and lights are used by the U. S. Navy, American and foreign oil companies in underseas exploratory work, and by professional underwater photographers on national magazine assignments.

The housings for the Bolex H-16, B & H 200, Cine-Royal, and Brownie are made of optically-correct Plexiglass and have watertight fittings of patented design, plus the facility for quick removal of camera by simply unscrewing two knurled nuts. Convenient external controls enable the cameraman to wind the motor spring and control the shutter release. Additional controls for setting lens focus and aperture are optional.

In addition to the Plexiglass housing for the Bolex H-16, there is a cast aluminum model which features a self-contained, battery-driven motor for the camera. External controls are provided for stopping and starting motor, focusing and setting lens aperture. Weighing 41 pounds out of water, the case weighs but half-a-pound underwater and is pressure-safe to a working depth of 150 feet.

Housings for the 16mm and 35mm Arriflex cameras are also of cast aluminum, provide all external controls plus facility for using the cameras' well-known reflex focusing viewfinder. Both housings have been tested in actual use at 100 feet below the surface without pressurization.. Weight of each above surface is 31 pounds, and approximately four pounds negative below.

Klein has selected the name of a dangerous, deep-water shark, Mako, as the trade-name for his photographic products. The 30-year-old van dyked underwater expert, who occasionally takes time out from his business to go on a shark "seafari," has also named his 80-foot PT boat the "Mako." The craft, which he converted for underwater photography and spearfishing, has a unique ladder that permits descent of underwater photographers directly into the sea; on the port side is a place for cameras, housings, light meters, tripods, and sound microphones; and on the opposite side, compartments for the air-compressor, undersea breathing units, tanks, fins and weighted belts.

When Klein goes underwater to take pictures he prefers the waters of the outer islands of the Bahamas or east of the Florida Keys where the reefs are overflowing with marine life and the water is spring clear. That is where he always heads the Mako when he is shooting film strips for himself, or movies for national television programs or amateur cinematographers on vacation charter trips.

Marine biologists say that the waters from Fowey Reef to Dry Tortugas, just east of the Keys are the only waters within the continental shelf of the United States that have such luxuriant reefs. This section contains the unusual mixture of Atlantic coast and West Indian fish and plant life. Here are to be found tropical butterflies, rock beauties and angel fish as well as dolphin, bonita and snapper, all excellent subjects for underwater movie making.

The explanation is found in the fact that the Gulfstream waters are warmer than waters usually are at the southern

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latitudes of the United States. This means that fish and plant life that usually abound only in warmer waters farther south, are able to thrive here.

Usually, this phenomenon is confined to the coral belt of Australia, particularly where the Great Barrier Reef extends 1,200 miles into the Pacific. There also are prominent areas in the Indian Ocean and Red Sea. But the only coral belt in the continental waters of the United States is in southeast Florida.

The Caribbean area farther south is even superior to the waters off Florida as far as abundance of marine life is concerned. Klein has also photographed such spots as Eleuthera, Andros Island and Spanish Wells, all among the outer islands of the Bahamas east of Nassau. He also works at Silver Springs, Weekiwachee and Wakulla Springs on the mainland of Florida.

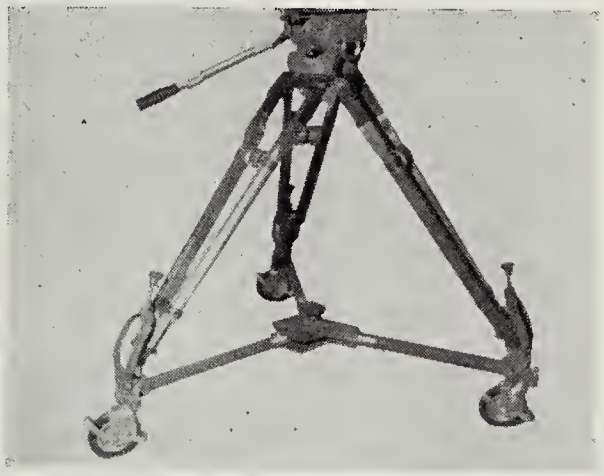
But, whether he shoots in a Florida spring or in the middle of the Gulfstream, the same underwater problems prevail, he says. The sun must be shining and the water must be relatively clear of particles of sand. Often by the time a photographer lines up his scene, steadies his tripod on the floor of the sea, the sun has moved behind a cloud. Or, the movement of the actors and directors and equipment has stirred up the sand so much that the water is no longer clear enough for photography.

Then, by the time the sand settles and the sun comes out again, the air supply tanks may be emptied and it is time to return to the surface for replacements—and start the descent over again. But the results make the obstacles worth overcoming. Shooting under water for the amateur need not be such a tedious experience.

"The problems of sand disturbance caused by the use of tripods may be eliminated by shooting as you swim, with the camera hand-held," said Klein. "There are hundreds of spots in the outer Bahamas where even just a mask and snorkle will suffice for taking pictures in waters 10 feet deep."

Underwater photographers do not have to use self-contained breathing equipment and go into the deeper realms. Instead, they may photograph with their head under water, near the

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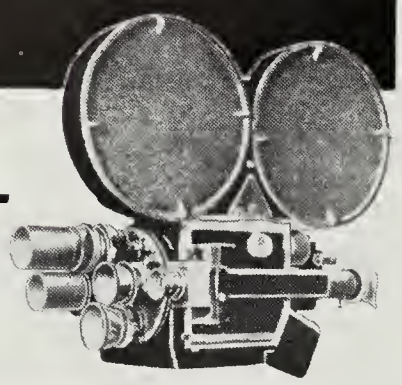


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surface, breathing through a snorkle.

Klein has shot more than 200,000 feet of underwater movies in black-and-white and color as well as related still publicity shots, during the past three years. He filmed the television promotion for Life magazine that preceded the issue containing the story on "Twenty-thousand Leagues Under the Sea." He also filmed a series of 13 shorts for a national television program.

Klein also designs custom water-tight cases for other cameras, still or cine. The standard line of cases previously mentioned are on sale in many camera stores, also in shops catering to the skin diver fraternity. This could mean that we shall soon see some really startling underwater movies on TV and theatre screens, once professional skin divers add movie making to their fascinating submarine activities.

HOME MOVIE PLOTS

(Continued from Page 308)

for the towel—and drying his face on the edge of the dress! This is certainly not a strong enough situation to carry even the shortest of films, but it could be justifiably introduced into many domestic comedies without any difficulty.

The next page of the paper is perhaps the most invaluable of all to a movie maker in search of a subject. It contains the personal column of small ads, an unfailing source of stories. Despite the invasion of thinly disguised commercial advertisements, the personal column of my paper never has less than a dozen announcements which indicate an interesting anecdote behind their terse offers or requests.

"Lost, white miniature poodle, 6 years old. Reward given for information leading to his return." Was the dog a child's favorite pet, an old maid's idol, or a present to a girl from her boy friend? Is it lost, stolen or strayed? What happens to white miniature poodles alone in a city?

"A family, 3 adults, 5 children, seeks seaside accommodation, 2 weeks July/August. Reasonable terms." With so many seaside hotels clamoring for business, why does this family have to advertise? Did they leave their peak month booking too late? If so, why?

"Obliged dispose exquisite dark Canadian mink cape stole. Offers please." Whose decline does this record? What happens if there are no offers? What's the story behind the mink?

By putting two advertisements together you can even get inspiration from such unpromising stuff as "Old floors sanded and polished." Match it with, say, "All About Your Wedding—the complete guide to etiquette and procedure," and you're well on the way to a rip-roaring farce.

The gossip pages are generally too personality-ridden too provide anything sufficiently meaty for a script. But occasionally you'll find an anecdote which might be just as amusing or dramatic if it concerned the hero of your next production.

If your paper runs a short story, this might seem the most obvious choice of all for plot material. But beware! Quite apart from all questions of copyright and obtaining author's and publisher's permission, it's rare that a story written solely to be read can be satisfactorily adapted to suit the screen by an amateur, especially for silent production.

Literary and filmic form seldom coincide. A writer is frequently so concerned with description, unexpressed thoughts and hidden motivations that his work has nothing in common with film requirements, where action and movement are of primary importance. So it's best to direct your attention towards the news paragraph, the cartoon and the advertisement rather than attempt an adaptation which all too often beats even an experienced professional.

After all, remember that the success of your search depends not on the peculiarity of your material—the journalist's bread and butter—but its potential power of moving or amusing your audiences. If your theme doesn't make you happy, angry or sympathetic, you've little chance of arousing any such emotion in those who are going to see your film. So welcome the countless suggestions made every morning by every page of your newspaper—but question your emotional response to every one of them.

MOBILE CAMERA SHOTS

(Continued from Page 295)

middle photo. Here it was desired to get a shot of two stage drivers as important dialogue was being recorded. It was a reverse-angle shot, with the camera "looking" over the shoulders of the driver and his companion and down toward the horses.

We had a choice of two methods for making this shot: (1) using the regular stage coach with the camera mounted on top of it, or (2) by the method shown in the photo. To have followed the first method would have resulted in a very "ragged" shot due to unsteadiness of the stage coach—even when driven on a paved highway. So the second choice was an easy decision.

The idea was suggested by one of

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Produced by: Clarence Greene
Phatagraphed by: George Falsey, ASC
Story and Screen Play by: Frank Gilray

THE CAST

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Dara Temple.....Jeanne Crain
Vinnie Harald.....Broderick Crawford
Eric Daolittle.....Russ Tamblyn

(Picture is scheduled far general natianal release after July 6, 1956.)

our grips, and it found ready acceptance with director Russell Rouse. Indeed, the incident is just one of many which illlustrate the unusual cooperation director Rouse inspired in the whole technical crew. He continually demonstrated a refreshing appreciation for the other fellow's viewpoint and suggestions, which paid off in a number of ways and made his initial M-G-M directorial assignment a highly successful one.

As shown in the photo, a parallel was erected over the cab of the camera car on which the camera was mounted and set at the desired angle. On the forward platform of the car, another parallel was erected, using demountable tubular sections, and on this was placed the spring seat from the stagc coach. Also attached to the front of the car was the regular assembly of wagon tongue, singletrees, traces, etc., from the coach. The two teams of horses were harnessed up and handled by the drivers in the same manner as when drawing the stage coach. The camera car utilized its own power for travelling, but maintained just enough drag on the horses to give them the "feel" of pulling the weight of the coach.

The shots we made with this setup, of course, were without benefit of any booster lights, as movement of the horses and vehicle was always compatible with the existing sunlight. Whenever we had scenes to stage late in the day or where some shadow fell across the path of travel, fixed booster light was supplied either by arc lamps or sunlight reflectors.

In order to point up the desolate terrain over which the three desperados travel between the two small towns mentioned in the synopsis of the story above, it was decided to photograph a substantial part of their trek from overhead, with the camera mounted in a helicopter. It isn't always practical to make straight down shots from a helicopter because thc great turbulence of air churned by the craft's propellers belies its use by the obvious manner in which trees, grass, shrubs or water surfaces are agitated by the great down draft of air. But our action was staged on extremely rugged terrain entirely barren of growth.

The third photo shows the manner in which the Mitchell camera was mounted on the 'copter. A sturdy scaffolding that extended from one side of the craft was bolted to its frame. On this was mounted a conventional hi-hat, and the camera and head mounted upon it. With an experienced operator at the controls of a craft such as this, it is possible to secure far better photographic results than when photographing from a plane. In addition, we wcre able to zoom down upon our subjects for some startling pictorial results.

Nonc of the mobile equipment I have described above is new or unusual. Yet, each time anyone of the units is used, there invariably are new problems to solve—some new switch in procedure made necessary by the particular production or the scene at hand. So, almost invariably the use of such equipment presents a new and interesting challenge —an opportunity, perhaps, to apply it in a new way; to obtain some new result not previously accomplished. I think that our application of the Chrysler camera car to the stage coach sequence is a good example of this.

In reviewing this production on the screen, the observant photographer, I believe, will note the versatility of camera technique and the wide range of ways in which the camera has been employed to achieve new and interesting pictorial results.

NEW OXBERRY CAMERA

(Continued from Page 302)

center for film strip. The reason for this is that the camera goes forward for live action direction in work with puppets and miniatures, whereas it operates in reverse for animation.

The rack-over viewfinder with ground glass focussing is mounted on the hinged-door sidc of the camera. The eyepiece faces the operator when the camera is on the animation stand. A new optical system rectifies the subject so the image is erected and copy may be read from left to right.

The superimposure viewing device facilitates composing and focussing. It has a reticle plate and two registration pins which are identical with those of the shuttle. This permits a frame to be located precisely on a designated section of the animated or projected image in conjunction with cross-haired ground glass. The image plane of the film when racked-over is the same as the film plane in the shuttle. When a light is placed in the eyepiece, the image may be project-

(Continued on Page 322)

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Photographic Assignments

APRIL • 1956

Who, where and what the industry's cameramen were shooting last month.

ALLIED ARTISTS

• Harry Neumann, ASC, "House on Lookout Mountain," with Bill Elliott and Kathleen Case. Edward Bernds, director; "Chasing Trouble," with Huntz Hall and Stanley Clements. George Blair, director.

• John J. Martin, ASC, "Yaqui Drums," with Rod Cameron, J. Carroll Naish and Mary Castle. Jean Yarborough, director.

AMERICAN NATIONAL

• John Mescall, "TV Readers' Digest," TV. Various directors.

• William A. Sickner, ASC, "Medic," TV, (Medic TV Prods.) with James E. Moser, Frank La Tourette, and Virginia Martindale. James E. Moser, director.

• Curt Fetters, "I Led Three Lives," TV, (Ziv-TV with Richard Carlson. Herb Strock, director; "The Man Called X," TV, (Ziv-TV) with Barry Sullivan. Eddie Davis, director; "Science Fiction Theatre," TV, (Ziv-TV) with Ruth Hussey and Wayne Morris. Herb Strock, director.

• Kenneth Peach, ASC, "On Guard," TV, (Strategic Air Command, shooting at March Field). Harold Daniels, director.

CALIFORNIA STUDIOS

• Fleet Southcott, "Gunsmoke," TV, (Filmaster Prods. Inc.) with James Arness and Dennis Weaver. C. Marquis Warren, director.

• Walter Strenge, ASC, "Alarm," (Roland Reed Prod.). William Claxton, director.

• Joseph Biroc, ASC, "Cavalry Patrol," TV pilot, (Filmaster Prod. Inc.). C. Marquis Warren, director.

BILTMORE STUDIOS (New York)

• J. Burgi Contner, ASC, "The Goldbergs," TV, (Guild Films) with Gertrude Berg, Robert Harris and Eli Mintz. Marc Daniels, director; "I Spy," TV, (Guild Films) with Raymond Massey. William Berke, director.

COLUMBIA

• Gert Andersen, ASC, Ford Theatre, TV, with Ruth Roman and Philip Carey. Sidney Miller, director.

• Henry Freulich, ASC, "Reprisal," (Technicolor with Guy Madison, Felicia Farr and Kathryn Grant. George Sherman, director.

• Burnett Guffey, ASC, "Night Fall," with Aldo Ray and Anne Bancroft. Jacques Tourneur, director.

• Ben Kline, ASC, "Shakedown on Biscayne Drive," with Lee J. Cobb, Edward Arnold and Patricia Medina. Fred F. Sears, director.

• Ray Rennahan, ASC, "Guns of Fort Petticoat," (Brown-Murphy Pictures, Inc.), with Audie Murphy. George Marshall, director.

• Kit Carson, "Father Knows Best," TV, (Screen Gems) with Robert Young. Jacques Tourneur, director.

• Charles Lawton, ASC, "Celebrity Playhouse," TV, (Screen Gems) with Sterling Hayden. James Nilsen, director.

WALT DISNEY

• Charles Boyle, ASC, "Westward Ho, the Wagons," (CinemaScope & Technicolor) with Fess Parker, and Kathleen Crowley. William Beaudine, director.

• Gordon Avil, ASC, "The Hardy Boys," TV. Charles Haas, director.

FILMCRAFT STUDIOS

• Virgil Miller, ASC, "You Bet Your Life," TV, (Filmcraft Prods.) with Groucho Marx. Robert Dwan and Bernie Smith, directors.

FLYING A

• Bill Bradford, ASC, "Buffalo Bill, Jr.," TV, with Dickey Jones and Pappy Cheshire. George Archinbaud and Frank MacDonald, directors; "Annie Oakley," TV, with Gale Davis. George Archibaud and Frank MacDonald, directors.

JERRY FAIRBANKS STUDIO

• Jerry Fairbanks, Oldsmobile Academy Awards commercial, TV. Jerry Fairbanks, director.

FOX WESTERN AVENUE STUDIOS

• Sam Leavitt, ASC, "Knight of the South Seas," TV, (Lorena Prod.) with Jon Hall. Elmo Williams, director.

GENERAL SERVICE STUDIOS

• Robert Pittack, ASC, "Private Secretary," TV, (Chertok TV, Inc.) with Ann Southern, Don Porter and Ann Tyrrell. Oscar Rudolph, director.

• Harry Wild, ASC, "Burns & Allen Show," TV, (McCadden Prods.) with Gracie Allen and George Burns. Frederick deCordova, producer-director; Carnation & B. F. Goodrich commercials, TV. Frederick deCordova, director; "Bob Cummings Show," TV, (Laurmac Prods.) with Bob Cummings and Rosemary DeCamp. Rod Amateau, director; Winston commercials, TV. Rod Amateau, director.

• James Van Trees, ASC, "The People's Choice," TV, (Norden Prods.) with Jackie Cooper and Pat Breslin. Jackie Cooper, director.

• Neal Beckner, "The Adventures of Ozzie and Harriet," TV, (Stage 5 Prods.) with Ozzie, Harriet, David and Ricky Nelson. Ozzie Nelson, director.

GOLDWYN STUDIOS

• Lee Garmes, ASC, "The Sharkfighters," (CinemaScope & Color) (Samuel Goldwyn Jr. Prods. UA release) (Shooting in Cuba) with Victor Mature and Karen Steele. Jerry Hopper, director.

• William Whitley, ASC, "Crossroads," TV, (Federal TV, Inc.) with Rod Cameron, Ralph Murphy and other directors.

• George Clemens, ASC, "Schlitz Playhouse of Stars," TV, (Meridian Prods.). Jim Sheldon, director.

• Hal Mohr, ASC, "The Boss," (Boss Prods. for UA release) with John Payne, William Bishop and Doe Avedon. Byron Haskins, director.

• Walter Strenge, ASC, "Schlitz Playhouse of Stars," TV, (Meridian Prod.). Jack Gage, director.

• Norbert Brodine, ASC, "The Loretta Young Show," TV, (Lewislor Prod.) with Loretta Young. Richard Morris, director.

INDEPENDENTS

• Stanley Cortez, ASC, "The Lonely Gun," (Robt. L. Jacks Prod. for UA release) with Anthony Quinn and Katy Jurado. Harry Horner, director.

• Guy Roe, ASC, "Gangbusters," TV, (Visual Drama, Inc.) Bill Kern, director.

• Bill Margulies, "Pharoah's Curse," (Bel-Air Prod. for UA release) with Mark Dana and Ziva Shapir. Lee Sholem, director.

• Ray Flin, "Creatures from Green Hell," (Gross-Krasne Prod.) with Jim Davis and Robert E. Griffin. Kenneth Crane, director.

• Fred West, ASC, "It conquered the World," (Sunset Prod. for ARC release) with Peter Graves and Beverly Garland. Roger Corman, director-producer.

• Charles Van Enger, ASC, "The Brass Legend," (Bob Goldstein Prod. for UA release) with Hugh O'Brien, Nancy Gates and Raymond Burr. Gerd Oswald, director.

• Frank Planer, ASC, "The Pride and the Passion," (Technical; VistaVision) (Stanley Kramer Prod. for UA; shooting in Spain) with Cary Grant and Frank Sinatra. Stanley Kramer, producer-director.

KEY WEST STUDIOS

• Walter Strenge, ASC, Series of religious pictures, TV. William Claxton, director.

KLING STUDIOS

• Brydon Baker, "Snowfire," (McGowan Prods.) (Eastmancolor; wide-screen) with Don McGowan and Molly McGowan.

• Glenn Macwilliams, Richfield Oil commercial, TV. Hank Ludwin, director.

KTTV STUDIOS

• Mack Stengler, ASC, "Liberace," TV (Guild Films Inc.) with Liberace. Duke Goldstone, director; "Here Comes Tobar," TV (Guild Films) with Tiger Fanfara. Duke Goldstone, director.

• Ellsworth Fredericks, ASC, "Five Steps To Terror," (Grand Prod. for UA release) with Ruth Roman and Sterling Hayden. Henry S. Kesler, producer-director.

METRO-GOLDWYN-MAYER

● Fred Jackman, Jr., "Julie," (Arwin Prods. for MGM release) with Doris Day, Louis Jourdan, Barry Sullivan and Frank Lovejoy. Andrew Stone, director.

● Robert Bronner, "The Opposite Sex," (CinemaScope & Color) with June Allyson and Jeff Richards. Dave Miller, director.

● Robert Surtees, ASC, "Raintree County," (65mm and Color) with Montgomery Clift and Elizabeth Taylor. Edward Dmytryk, director.

● John Alton, "Tea and Sympathy," with Deborah Kerr and John Kerr. Vincente Minnelli, director.

● Russell Harlan, ASC, "Teahouse of the August Moon," (Color; CinemaScope) (shooting in Japan) with Marlon Brando and Glenn Ford. Daniel Mann, director.

● Fred A. Young, ASC, "The Barretts of Wimpole Street," (CinemaScope & Color) (shooting in England) with Jennifer Jones and Sir John Gielgud. Sidney Franklin, director.

● Joseph Brun, ASC, "A Man Is Ten Feet Tall," (Jonathan Prod., shooting in New York City) with John Cassavetes and Kathleen Maguire. Martin Ritt, director.

● George Folsey, ASC, "The Power and the Prize," with Robert Taylor, Burl Ives and Elisabeth Mueller. Henry Koster, director.

MOTION PICTURE CENTER

● Robert De Grasse, ASC, "Make Room for Daddy," TV, (Desilu Prod.) with Danny Thomas, Jean Hagen and Sherry Jackson. Sheldon Leonard, director.

● Sid Hickox, ASC, "The Red Skelton Show," TV, (Desilu Prod.) with Red Skelton. C. Burns, director.

● Nick Musuraca, ASC, "The Line Up," TV, (Desilu Prod.) with Warren Andersen. H. Morse, director.

PARAMOUNT

● Charles Lang, ASC, "Gunfight at the O K Corral," (VistaVision & Technicolor) with Burt Lancaster, Kirk Douglas, John Ireland and Jo Van Fleet. John Sturges, director.

● Loyal Griggs, ASC, "The Maverick," (VistaVision & Technicolor) with Charlton Heston, Anne Baxter and Gilbert Roland. Rudy Mate, director.

● Ernest Laszlo, ASC, "The Loves of Omar Khayyam," (Technicolor; VistaVision) with Charlton Heston, Anne Baxter and Gilbert Roland. William Dieterle, director.

● Lionel Lindon, ASC, "The Lonely Man." (Technicolor; VistaVision) with Jack Palance and Elaine Aiken. Henry Levin, director.

● Ray June, ASC, "Funny Face," (Technicolor; VistaVision) with Audrey Hepburn and Fred Astaire. Stanley Donen, director.

● Daniel Fapp, ASC, "Hollywood or Bust," (Technicolor; VistaVision) with Dean Martin, Jerry Lewis and Pat Crowley. Frank Tashlin, director.

REPUBLIC STUDIOS

● Ed Colman, ASC, "Dragnet," TV, (Mark VII Prod.) with Jack Webb. Jack Webb, director.

● John MacBurnie, ASC, "The Millionaire," TV with John Larch. Sobey Martin, director.

● Reggie Lanning, "Alfred Hitchcock Presents," TV. Robert Stevenson, director.

● Dan Clark, ASC, "Do You Trust Your Wife," TV, (Don Monya Co.) with Edgar Bergen. Jim Morgan, director.

RKO

● Joseph Biroc, ASC, "Tension at Table Rock," with Richard Egan, Dorothy Malone and Cameron Mitchell. Charles Marquis Warren, director.

● George Diskant, ASC, "Stage Seven, Hall of Stars," TV, (Four Star Prods.).

● William Mellor, ASC, "Back From Eternity," with Robert Ryan and Anita Ekberg. John Farrow, producer-director.

● William Snyder, ASC, "Beyond a Reasonable Doubt," with Dana Andrews and Joan Fontaine. Fritz Lang, director.

● Ray Fernstrom, ASC, "Return to Eternity." (Air Scenes.) John Farrow, director.

HAL ROACH STUDIOS

● Lucien Andriot, ASC, "The Life of Riley," TV, with William Bendix. Abby Berlin, director.

● Paul Ivano, "Stories of John Nesbitt," TV, with John Nesbitt. Various directors.

● Jack Mackenzie, ASC, "Code 3," TV. Ted Post and Paul Landers, directors; "Frontier," TV (Tomoda Prod.). Various directors.

20TH CENTURY FOX

● Milton Krasner, ASC, "Bus Stop," (CinemaScope & Color) with Marilyn Monroe, Don Murray and Arthur O'Connell. Joshua Logan, director.

● Leo Tover, ASC. "The Day the Century Ended," (CinemaScope & Color) with Robert Wagner. Richard Fleischer, director.

● Wilfred Cline, ASC, "The Last Wagon," (DeLuxe Color; CinemaScope) (shooting at Sedona, Ariz.) with Richard Widmark and Tommy Rettig. Delmar Daves, director.

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● Leon Shamroy, ASC, "Best Things in Life Are Free," (Technicolor; CinemaScope) with Gordon MacRae and Sheree North. Michael Curtiz, director.

UNIVERSAL - INTERNATIONAL

● Russell Metty, ASC, "Battle Hymn," (CinemaScope) with Rock Hudson. Douglas Sirk, director.

● Ellis Carter, ASC, "The Mole People," with John Agar and Cynthia Patrick. Virgil Vogel, director; Eastman Kodak commercial, TV. Jack Daniels, director.

● Harold Lipstein, ASC, "The Great Man," with Joseph Ferrer and Mona Freeman. Jose Ferrer, director.

● George Robinson, ASC, "Gun for a Coward," (Technicolor) with Fred MacMurray and Chill Wills. Abner Biberman, director.

● Irving Glassberg, ASC, "Star Light," (Technicolor; CinemaScope) with George Nader and Julie Adams. Jack Sher, director.

● Arthur Arling, ASC, "Tammy," (Technicolor; CinemaScope) with Debbie Reynolds and Leslie Nielsen. Joseph Pevney, director.

● Maury Gertsman, ASC, "I've Been Here Before," with Jock Mahoney and Leigh Snowden. Richard Bartlett, director; Colgate commercial, TV. Wil Cowan, director.

● Jock Feindel, ASC, Marlboro commercial, TV. Wil Cowan, director.

● Lester White, ASC, Marlboro commercial, TV, Wil Cowan, director; Pabst Blue Ribbon commerical, TV, Jack Daniels, director; Eastman Kodak commercial, TV, Jack Daniels, director.

● Harold Lipstein, ASC, Marlboro commercial, TV. Wil Cowan, director.

● Wilfrid Cline, ASC, Pepsi Cola commercial, TV, with Polly Bergen. Wil Cowan, director.

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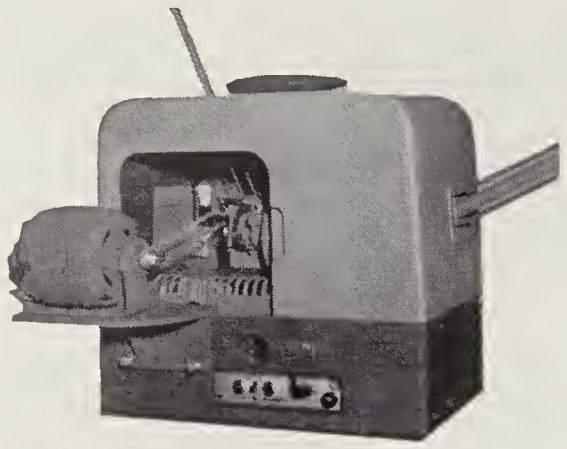
● Hal Rosson, ASC, "Toward the Unknown," (Warner-Color & CinemaScope) (Toluca Prods.) with William Holden, Lloyd Nolan, and Virginia Leith. Mervyn LeRoy, director.

● Robert Burks, ASC, "The Wrong Man," (Alfred Hitchcock Prod., shooting in New York City) with Henry Fonda and Vera Miles. Alfred Hitchcock, director.

● Harold Stine, ASC, "Anthology Series," TV. Don Weis, director; "Cheyenne," TV, (Warner Bros. Presents) with Clint Walker. Richard Bare, director.

● Carl Guthrie, ASC, "The Last Stop," TV, with James Dunn and John Barrymore, Jr. Tom Greis, director.

● Floyd Crosby, ASC, "The Old Man and the Sea," (WarnerColor; wide-screen) (shooting in Cuba) with Spencer Tracy. Fred Zimmermann, director.



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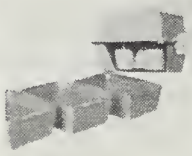
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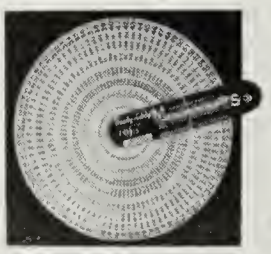
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NEW OXBERRY CAMERA

(Continued from Page 319)

ed onto the compound. A thumb slide shifts the viewfinder up and down changing the magnification for 16mm work.

An outstanding feature of the new camera involves the 35mm-16mm reticle design. All reticles are mounted in ground steel dove-tail plates having super-fine ground glass precisely mounted and aligned to match the film registration pins.

Markings on the ground glass reticles are essentially a series of rectangles. Starting with the largest and going down to the smallest they are as follows: (1) silent aperture, (2) camera sound aperture, (3) 35mm sound projection aperture, (4) dotted 25% TV cut-off aperture for 35mm, (5) 16mm camera aperture, (6) 16mm projection aperture, (7) dotted 25% TV cut-off aperture for 16mm. Reticles also have horizontal and vertical cross-lines common to all rectangles. A short tick represents the center of silent 35mm or 16mm film.

All Oxberry reticles are interchangeable and are available on clear glass for projection of light. The reticle gauge plate may be used as a visual gauge for viewing alignment and for center or squareness of developed negative stock. By holding the reticle gauge over any light source, a film that is mounted on pins may be checked visually.

Sprocket assemblies of the camera are readily installed or removed by manipulating two knurled thumb screws. A unique two-speed spindle transmits motive power to the sprocket assembly and proper engagement is accomplished automatically when either the 35mm or 16mm sprocket assembly is put in place.

Certain work requirements can be accommodated when a special cutout back pressure plate is installed. A light may be inserted for projection. For long rotascope work, there is an assembly that has a light between two sprockets. For super critical lineup work, a plug at the rear of the camera is removed, also sprocket assembly is removed to permit the operator to sight straight through the shuttle and lens.

An automatic take-up which attaches directly to the camera is designed with a torque motor on each spindle. In operation, only one of the motors is energized, depending on whether the camera is moving forward or reverse. The dead motor serves as a drag or brake. The take-up is ready for either forward or reverse camera action by merely operating a switch. Magazines accommodate 400 ft. reels of 35mm or 16mm film. Auxiliary take-up arms are available for 1000 ft. reels and for bi-pack work.

For optical printer installations. the camera is essentially the same except that it is not the rack-over type. The superimposure device is mounted in front of the shuttle for reflex viewing through the photographic lens on the printer.

Regardless of whether the camera is used for animation or optical printer work, it may be converted in 5 minutes from 35mm to 16mm without disturbing critical alignment.

WIDE ANGLE PROBLEMS

(Continued from Page 301)

— even when the camera is not tilted — due to barrel distortion inherent in many extreme wide angle setups. Cinerama does not have this as the optics of this system are those of a simple 27mm lens. Todd-AO has it to a great extent but corrects it in the optical printing step. All other wide screen systems have it in varying degrees.

As can be imagined, these two distortions — particularly when combined — make the problem of verticals even more troublesome than we have seen with the horizontals. There is little to be done about them except the obvious: keep pronounced verticals out of the extremes of the frame either by blocking them off or by changing the setup. Fortunately the extent of the problem — and usually its solution — can be seen on the ground glass of the camera finder. The eye is easily offended by bent buildings, etc., so as a general rule any verticals at the extremes of the frame should be studied with suspicion.

There is a further problem — the bending of sight lines — which I have not mentioned before because it is only likely to give trouble in cases of the most extreme wide angle lens. I mentioned once before of thinking of the distortion of horizontal lines as a bending backward into the screen. Even a line running through the center of the screen will be bent back in depth, but since we are shooting straight on it appears not to bend.

Suppose, instead of a straight line, we substitute a line of faces all looking at some distant point behind the camera. When projected, it will appear that the actors are all looking at different points with only those in the center looking in the true direction. This is due to the fact that as the line bends back, each person is rotated slightly in relation to the camera. This may not be noticeable just looking at the faces, but if we are close enough to see their eyes, the effect will be quite apparent. This can easily be corrected, of course, by giving the actors different points to

look at according to their position in the line, as determined in the ground glass. As may be imagined, this was a definite problem when shooting dialogue or making crowd shots in Cinerama. Actors talking to one another had to be given points to look at so that they would appear to be looking at one another and if, during a scene, an actor changed position in the frame, he had to be given a second point. This gave us a good deal of grief at first, as this distortion could not be seen on the Cinerama ground glass. But as we became familiar with the problem we had little difficulty. Outside of the Cinerama process, which has no choice of lenses, there is little likelihood of running into this, as few directors would shoot a dialogue scene with an extreme wide angle lens.

Long before wide screen was thought of, cameramen were familiar with the "pulled out" effect of wide angle lenses. A small round object photographed in the center of a screen will still appear round; but if it is moved toward the edge of the field it is pulled sideways — out of shape. This, of course, is due to the fact that at the sides of the field the image is hitting the film at an angle. As we get into wider and wider lens angles this effect becomes even more pronounced. Cinerama has very little of this problem (considering the angle it covers) since it is using three strips of film, which are perpendicular to the axis of the lenses. Todd-AO also has very little of this distortion since American Optical Company has introduced compensating distortion into Todd-AO lenses to counteract it. With other wide screen systems the distortion is very evident. It is from this we get our old adage about not making closeups or panning with wide angle lenses. As the lenses keep getting wider this certainly holds more than ever. However, there are certain situations where we have found it possible to pan even with the most extreme wide angle lens.

Where there are pronounced horizontal lines low or high in the screen, a normal pan from a stationary camera position is certainly not desirable as it will call attention to a bent line that may have been unnoticed before. A street may curve, but if the curve keeps changing as it goes across the screen, you are asking a lot of the credulity of your audience. Even without any pronounced geometry in the scene the "pulling out" of objects and their resultant increase in their speed of travel at the edges of the frame will be disturbing. However, in a fast pan, or a pan following some object, such distortions will probably go unnoticed.

Take the familiar scene in which an actor must walk down a street past the camera; the camera panning with him. If he walks far enough away from the camera to remain full figure all the time, the audience will have plenty of time to watch those lines bend their way tortuously through the picture. If, however, the actor is allowed to walk close to the camera, the increased screen size of his body will block off and break up the distorted lines, and the increased speed of the pan will not permit time for the distortions to be observed.

In most situations, even a slow pan will be quite acceptable if it is made while the camera is moving. With the camera in motion the "pulled out" effect described before is already present and is actually a factor that heightens the feeling of movement; and any distortion of lines is usually lost in the forward motion. For these reasons, in making running or dolly shots with wide angle lenses, the distortions are practically never noticed (with the possible exception of moving with the camera shooting straight to the side) particularly when moving with the subject. This is fortunate, for it is in movement that these lenses can be used to great effect. The increase of speed of people or objects moving through the sides of the screen approaches the effect our eyes actually see and give us a truer feeling of motion. This effect is even more pronounced if we are in a crowded or confined space — the shot moving through the narrow alley in "Summertime," or the shot moving through the cornfield in "Oklahoma!"

Beside the advantages of the extreme wide angles in movement it has the further advantage of giving us the opportunity to put the audience into the action. Besides photographing straight ahead these lenses are shooting to a considerable extent to the side. By moving in close to the action with an extreme wide angle lens we do considerably more than show the audience a picture of a specific action. In effect, we surround them with the action. A good example of this is the New Orleans jazz sequence, and the art students' ball sequence in "Cinerama Holiday." The audience is caught up in the action and excitement in a way that could only be achieved when a wide angle lens is joined with wide screen.

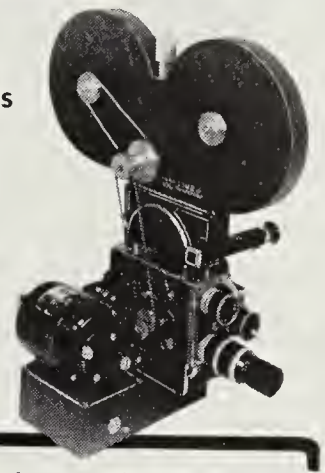
In many cases the wide angle is the lens "in the bottom of the box" — brought out only when lack of space forces its use. Greater understanding of its virtues and limitations can do much to increase its effectiveness in wide screen photography.

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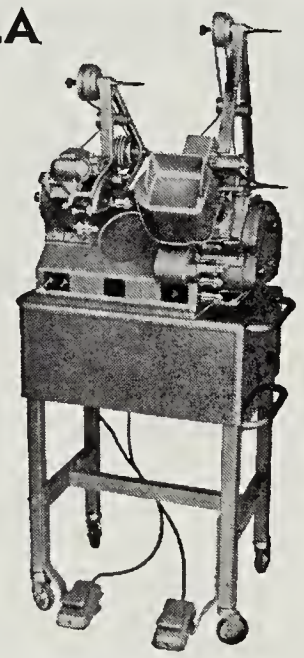
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(Continued from Page 298)

color balance a headache, but even exposure a real difficulty. Three days went in script consultations with the producer and the men on the spot, leaving seventeen days to shoot. To some extent the shortage of time was overcome by the unit being flown out to locations by the Bishop himself, who has some 4,000 hours on his private license.

To avoid tropical deterioration, exposed film was flown back to Australia for processing; but with an overall schedule so short, there was no chance of viewing the rushes. This meant that director and cameraman were completely in the dark as to how things were going, for neither saw a foot of their work until the film came back from the censor a week after their return home.

Lighting interiors was a major problem. These were lit with 110-volt reflector-floods, with the assistance of two reflector - spots; 110 - volt units were chosen, since amongst the few current supplies available were to be found both 110 and 240 volt systems. By using a series-parallel switching board, the lights could be used with either supply. Nowhere could more than six units be run at the one time, as even this put a rather terrifying load on the flimsy, makeshift house wiring. For the shots of the natives receiving the Sacraments, the only current available was from a small portable generator flown in by plane. Driven by a two-stroke motor, it delivered the grand total of 500-watts. Thus only close shots were possible, as no more than one shot could be run without the unit blowing up. The entire sequence showing the native receiving the last rites, the native children going to Confession, and the Nuptial Mass were shot with but a single reflector-spot for illumination!

Native sing-sings, congregational singing, etc., were recorded on a Velco 240-volt, 50-cycle tape recorder, powered by the portable generator delivering 240-volt 60-cycle power. Current fluctuations caused some wowing in the resultant recordings, but in the sing-sing this only added to the unusualness of the refrains. Avoiding the noise of the two-stroke engine was quite a difficulty, solved only by putting the generator as far out in the jungle as the local supply of war surplus cable would allow. Owing to the 60-cycle nature of the current, recordings ran slow then played back at Australia's standard 50 cycles; this was overcome by putting a brass collar on the recorder's capstan to bring the frequencies back to normal.

The short sermon in Pidgin English was post-recorded for the second edition of the film, but by then it was impossible to know what had been said, when the shots were originally taken. Words had to be written to fit the lip movements, and once these had been carefully timed to the work print, they were recorded directly on to film, and spliced into the sound track.

A device used quite effectively to bridge rather abrupt cuts in the editing was to introduce as an off-screen noise during the last few seconds of one sequence, the natural sounds of the following sequence, as though the two locations were close enough to allow the viewer to hear the sound before its cause is actually seen on the screen. For example, towards the end of the sequence dealing with the total destruction of all the Mission buildings, and the number of the missionaries lost during the war, you begin to hear the sound of a tractor hard at work; the next sequence opens with a closeup of the plough shear cutting through the red earth, followed by a longer shot of a Father at work on a tractor vigorously clearing the sight for the new buildings.

Perhaps the little company's strangest expense was payment for the sing-sing. These are normally performed at night and it was necessary to induce the natives to perform during the day, and in full sunlight as well; dancing in the tropical sun is no congenial task especially to a New Guinea native, so for this special performance the unit had to pay big money—a carton of canned meat.

Shooting was completed during the month of May, and by the following November the first print was ready for screening. Bishop Arkfeld, then on his way home on leave, called at Melbourne for the grand premiere.

"Other Sheep Have I" is but one of four mission films produced by C.F. Productions; others cover missions in Northern Australia, the Trobriand Islands (Eastern Papua), and Rabaul (New Britain).

A print of one of the films, "The Brown Veil," especially produced for the Catholic Life Exhibition, and which tells the story of the growth and work of Australia's greatest teaching order of Nuns, The Sisters of St. Joseph, was quickly ordered by the Australian Commonwealth National Film Library for inclusion in its collection of films of National Value.

Incidentally, the American Cinematographer's request for an article on C.F.P.'s film production activities was carried by a native girl from Maprik to the village of Ulupu in the mountains of North Central New Guinea, where the unit was engaged on its latest venture, a story film entitled "Jungle Parish."

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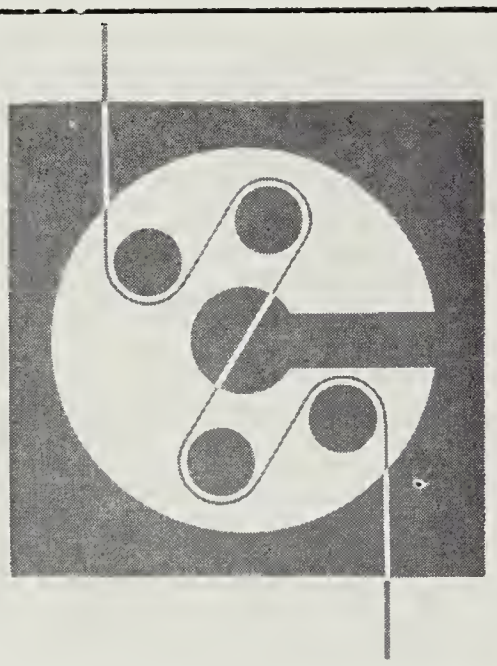
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(Continued from Page 311)

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The new Bell & Howell 200-EE is expected to be available from photographic dealers in June. The retail price will be under $300.00.

INDUSTRY NEWS

(Continued from Page 290)

tion, for frequency response calibration and for overall system evaluation of 16mm magnetic recorders and reproducers.

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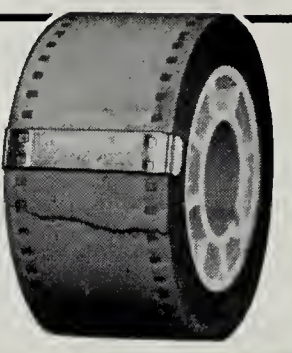
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A new approach to probing secrets of the latent image—the unseen picture that exists on photographic film after exposure but before development—was outlined March 27th by Dr. Cyril J. Staud, Eastman Kodak Co. vice-president in charge of research, speaking before scientists at General Electric Company in Schenectady, N. Y.

The new method involves supplying simultaneous pulses of light and electricity to a silver halide crystal. Such crystals are part of the light-sensitive coating on some photographic films. One important feature of the experiments thus far is that latent image formation follows the movement of electrons.

The new knowledge of the latent image is expected to aid in work on better photographic emulsions and in research on specialized photographic materials and equipment.

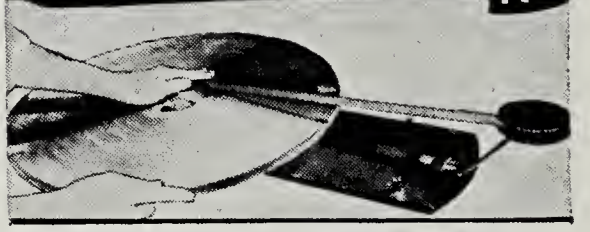






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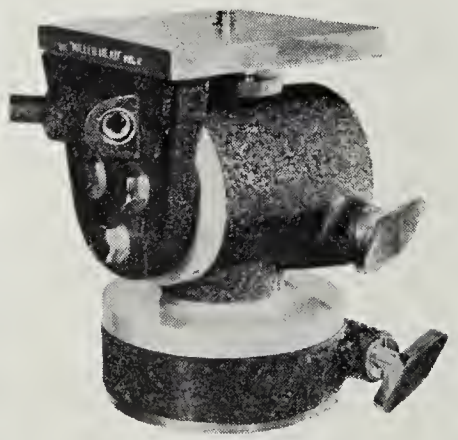
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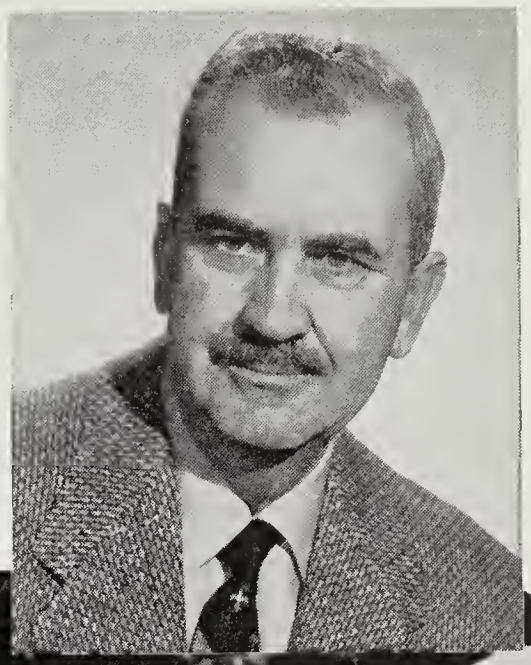
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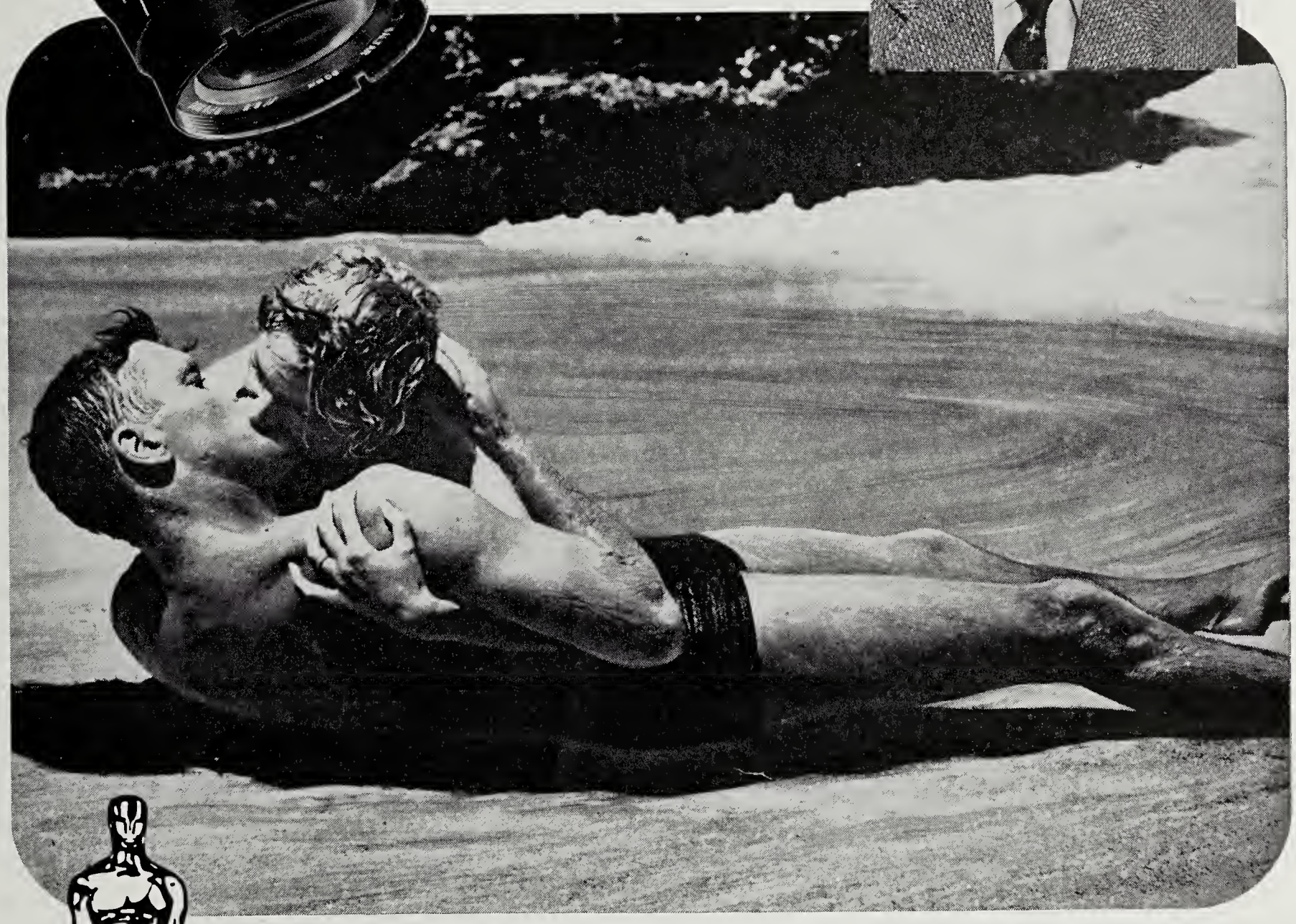
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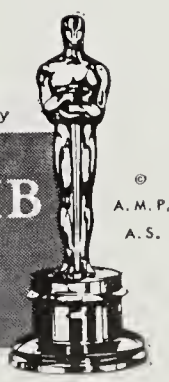
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- Small Studio Set Construction
- Filming "The Great Locomotive Chase"

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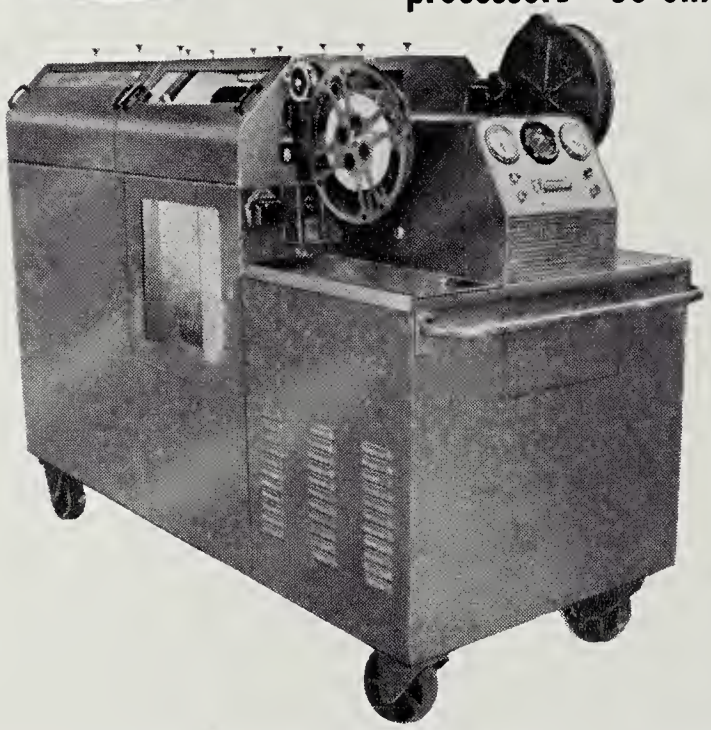
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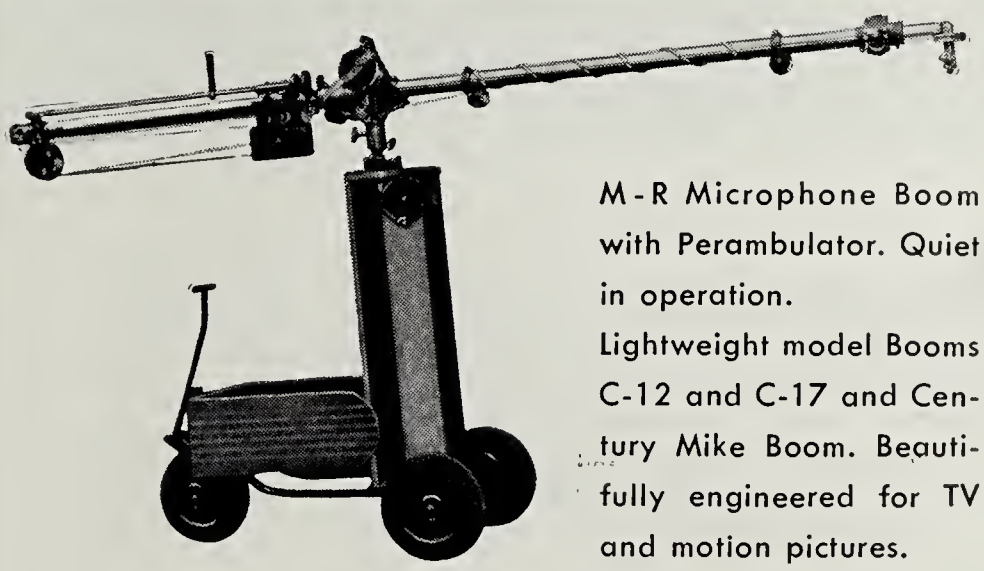
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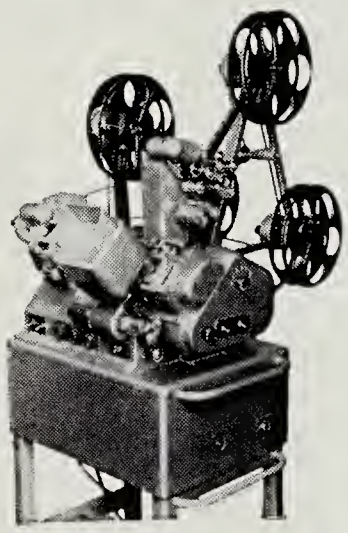
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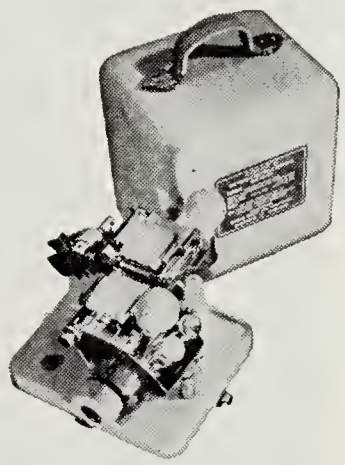
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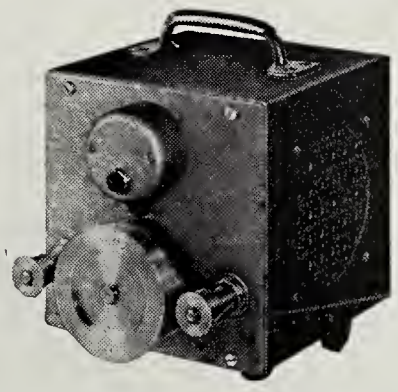
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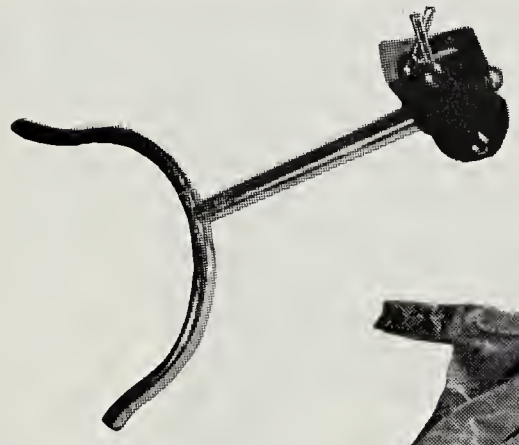
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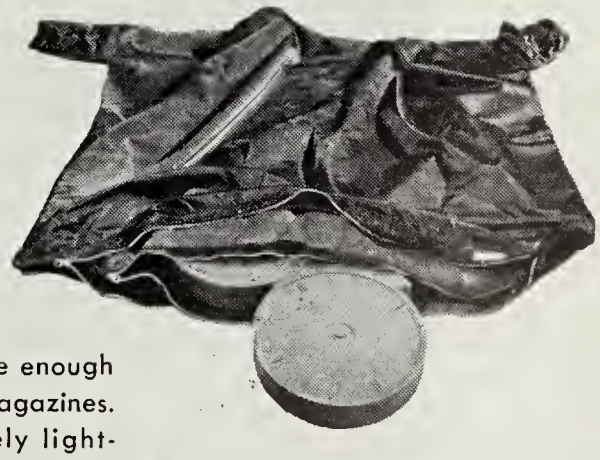
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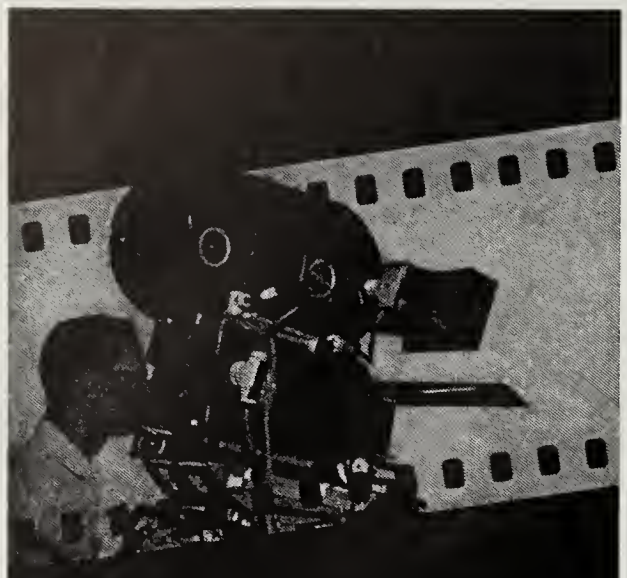
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Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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VOL. 37 JUNE • 1956 NO. 6

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ON THE COVER

HUNDREDS of spectators stare in the background as Director of Photography Charles Boyle, A.S.C. (2nd from left) starts the camera rolling on "The Great Locomotive Chase" for Walt Disney. At right, center, is Fess Parker who stars in picture along with Jeffrey Hunter. Here the Clayton, Georgia, depot is made up to look like the Marietta station of 1862. Story on the photography begins on page 354 of this issue. (Photo copyright by Walt Disney Productions.)

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Canada, $3.00 per year; Foreign, including Pan-American Union, $4.00 per year. Single copies, 25 cents; back numbers, 30 cents; foreign single copies, 35 cents; back numbers, 40 cents. Advertising rates on application. Copyright 1956 by A. S. C. Agency, Inc.



Mitchell Camera Films full color panoramic views of Roman Soldier sequence from the Bob Jones University Film, "Wine of Morning."

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These remarkable changes have been accomplished through the application of motion picture set techniques and the adoption of professional equipment used by major motion picture studios. The leading example of this development is seen in the increased use of the Mitchell 16mm Professional Camera, whose service-free operation and broad range of use has materially cut the costs of campus film production. Representative of film departments owning Mitchell Cameras are: Bob Jones University, Georgia Institute of Technology, Moody Institute of Science, and the Universities of California...Mississippi...Southern California...and Washington.

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Camera instructions are given by Mrs. Katherine Stenholm, Director of the Bob Jones University's film unit.

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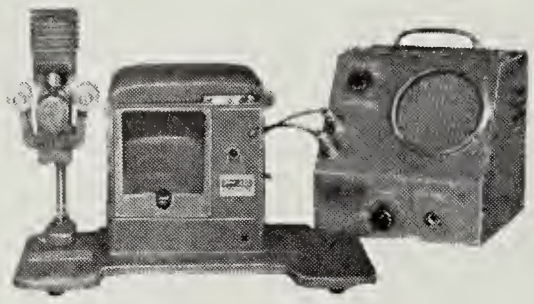
On the set of Pilate's Judgment Hall the Mitchell Camera focuses on set details created by students.

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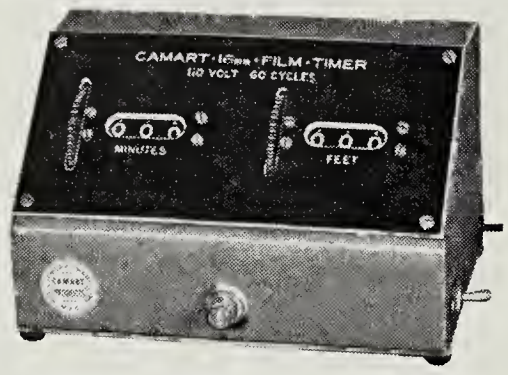
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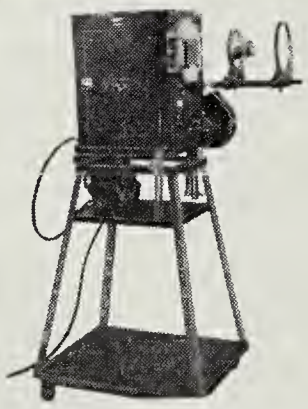
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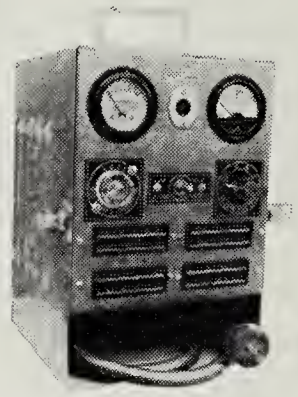
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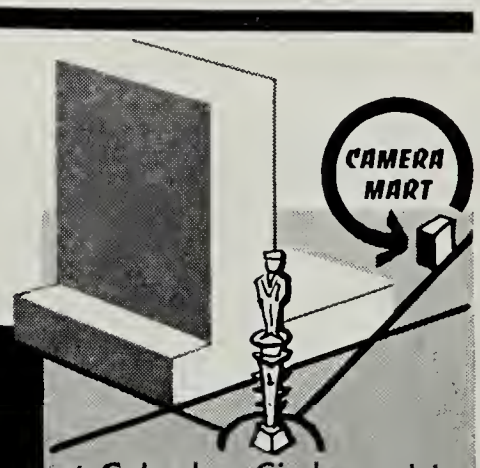
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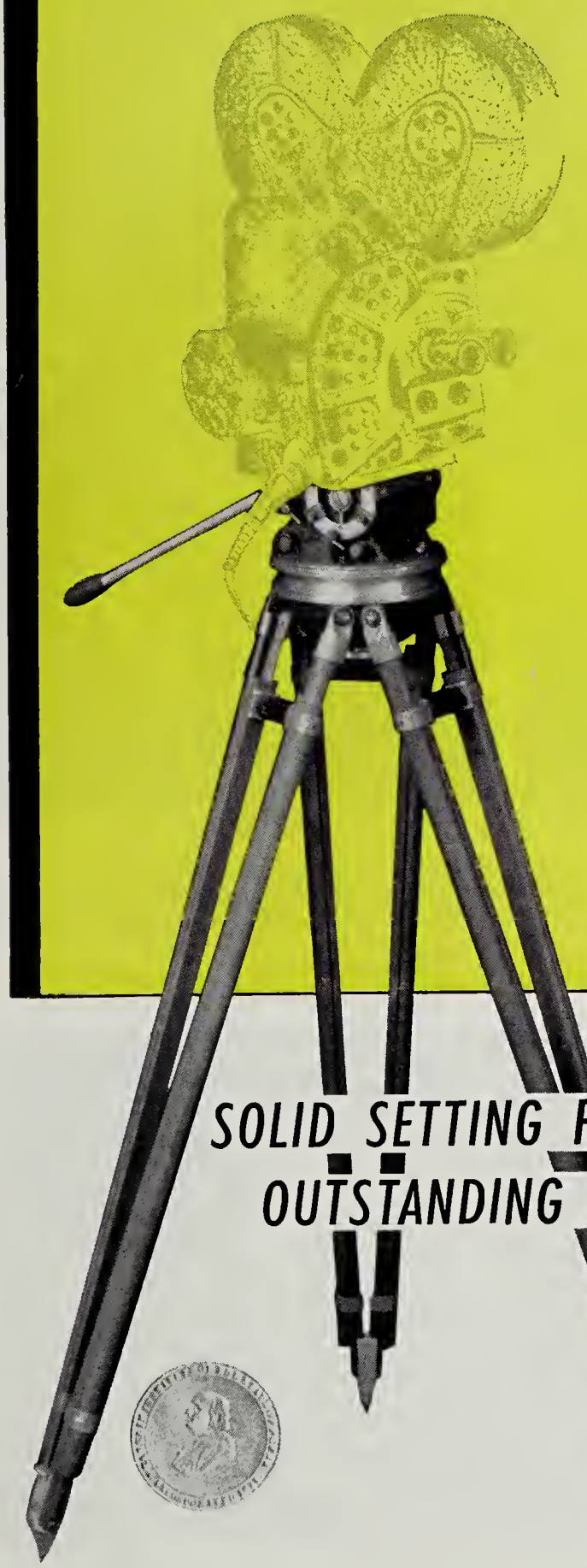
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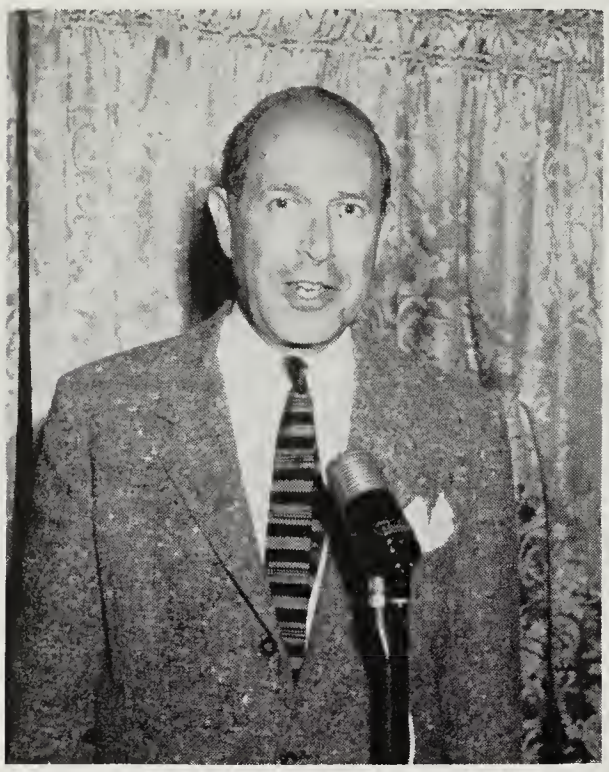
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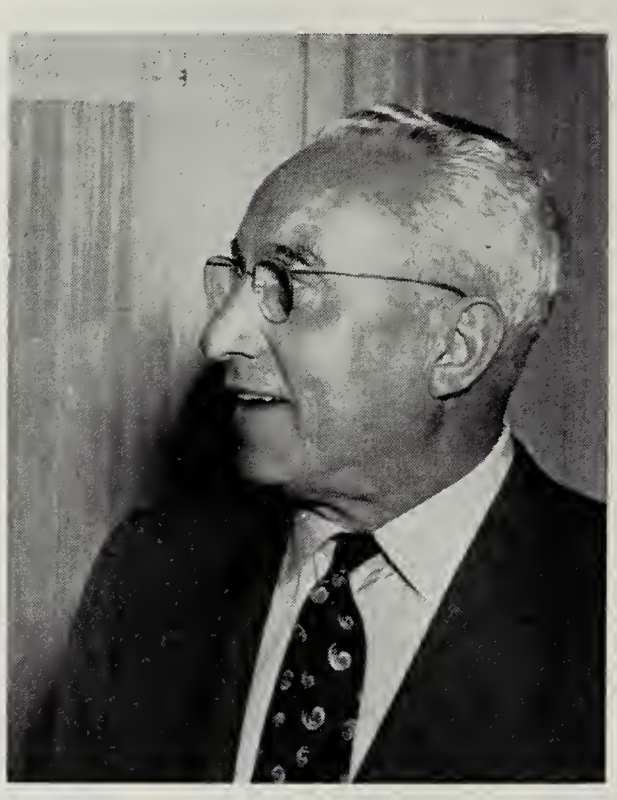
News briefs about the A.S.C. its members, and important industry personalities



RALPH AUSTRIAN



SIDNEY SOLOW



PETER MOLE

MAY MEETING of the American Society of Cinematographers featured talks by Ralph Austrian, of Allen B. DuMont Laboratories, and Sidney Solow, head of Consolidated Film Industries' Hollywood laboratories, on subject of movies on tape. Both discussed the implications advent of new Ampex Videotape recorder held for future of feature film making. Peter Mole, president of Mole-Richardson Company, recently returned from European tour, told of present status of film production in various European countries.



ALFONSO SANCHEZ TELLO (left) was one of guests at the A.S.C's. May meeting. Prominent in film production circles in Mexico, he's in Hollywood on vacation and to renew acquaintance with old friends, like cinematographer Ernest Laszlo, A.S.C. at his left.



AL SANTELL (2nd from left), one-time Hollywood director, was another guest of the American Society of Cinematographers at its May dinner-meeting. Others (from L to R) are Arthur Edeson, ASC president George Folsey and Lucien Andriot.

Lee Garmes, ASC, is in Cuba directing the photography of "The Big Boodle" for Lewis Blumberg Productions, with Errol Flynn.

• • •

Floyd Crosby, ASC, also in Cuba since May 1st, is directing the photography of "The Old Man of The Sea," which Leland Hayward is producing for Warner Brothers

Veteran cinematographer Johnnie Mescall is directing the photography of the "TV Reader's Digest" film series for Alpha Productions at American National Studios.

• • •

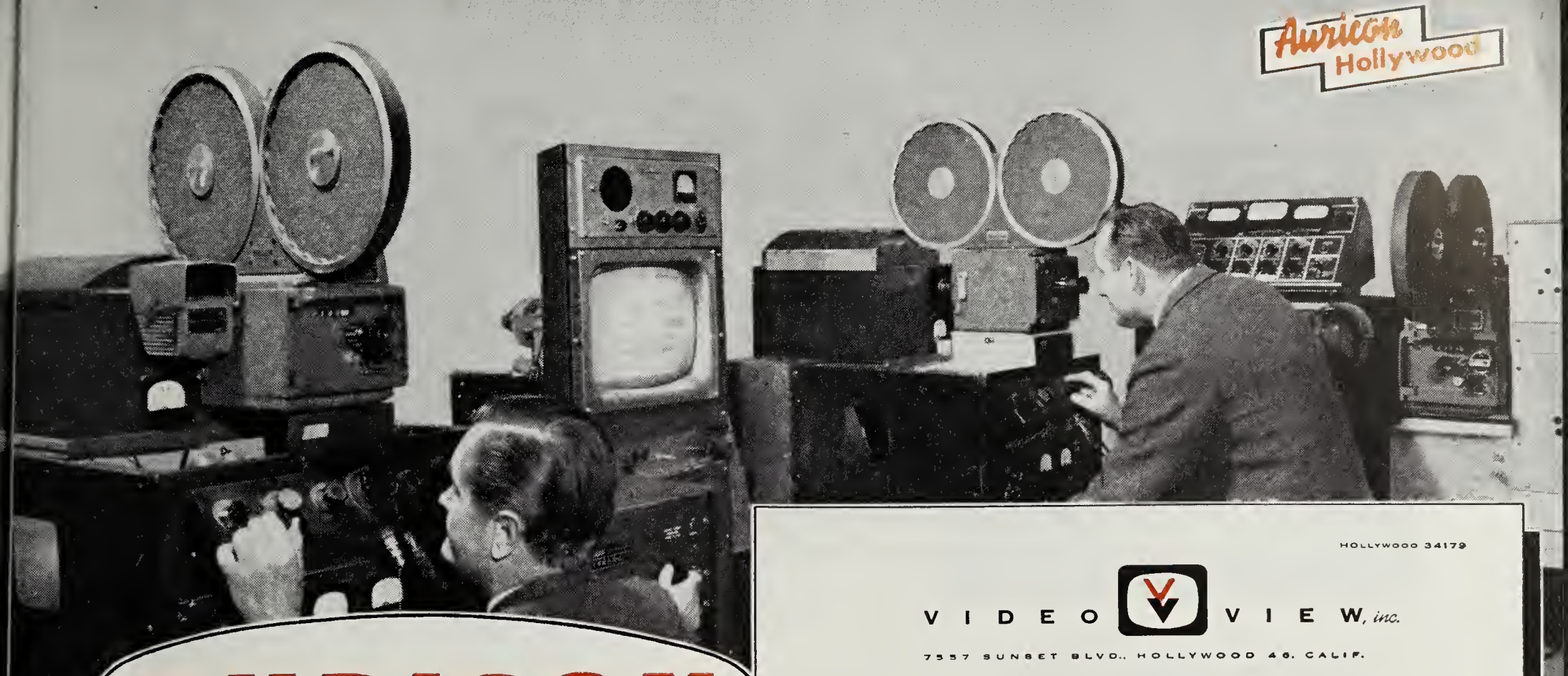
The A.S.C. last month voted to Active Membership Gayne Rescher of New York, one of the cameramen who aided in the filming of "Cinerama Holiday."

The Society also honored Richard H. Walsh, president of the I.A.T.S.E., with an Honorary Membership in the A.S.C. in appreciation of his efforts in securing the five day week for cameramen and other technical workers in the film industry

• • •

Sol Polito, ASC, veteran cinematogra-

(Continued on Page 340)



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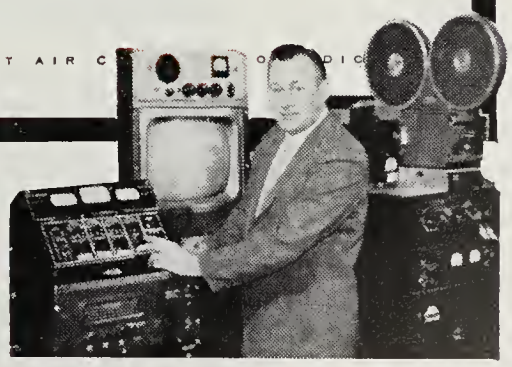
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President

VIDEO VIEW IS TO TELEVISION WHAT AIR C... TO RADIO

BRADLEY KEMP SAYS...

"In Kinescope filming, you've got to be right the first time! In our opinion, Auricon Super 1200 "TV-T" Cameras are the best bet for quality Kinescope recording—with dependability."



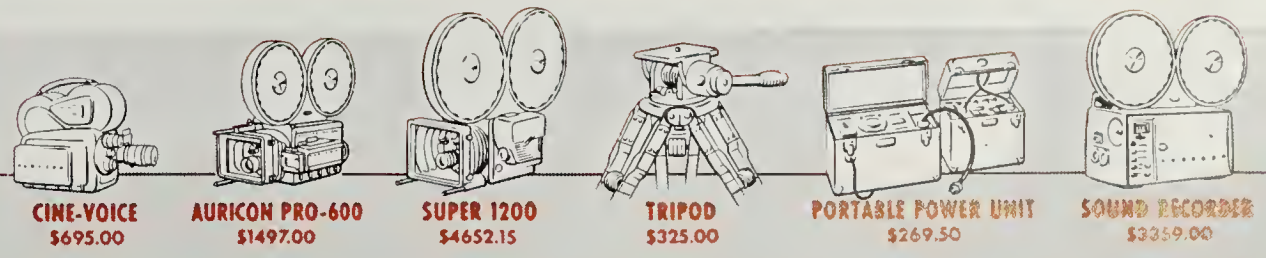
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- ★ Delayed Re-broadcasting
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- ★ Pilot Kinescopes
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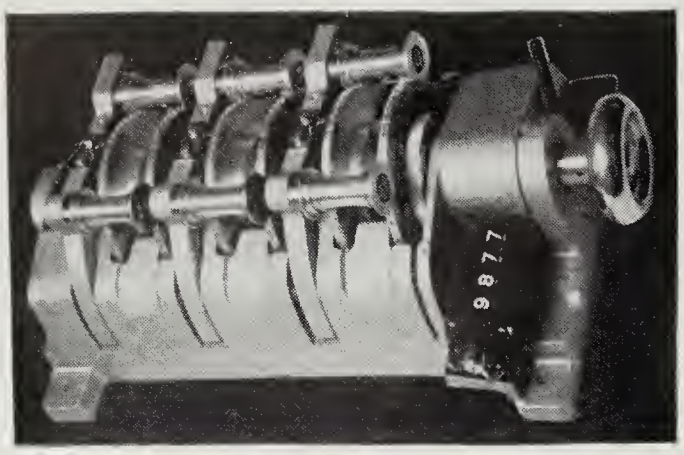


CINE-VOICE $695.00 · AURICON PRO-600 $1497.00 · SUPER 1200 $4652.15 · TRIPOD $325.00 · PORTABLE POWER UNIT $269.50 · SOUND RECORDER $3359.00

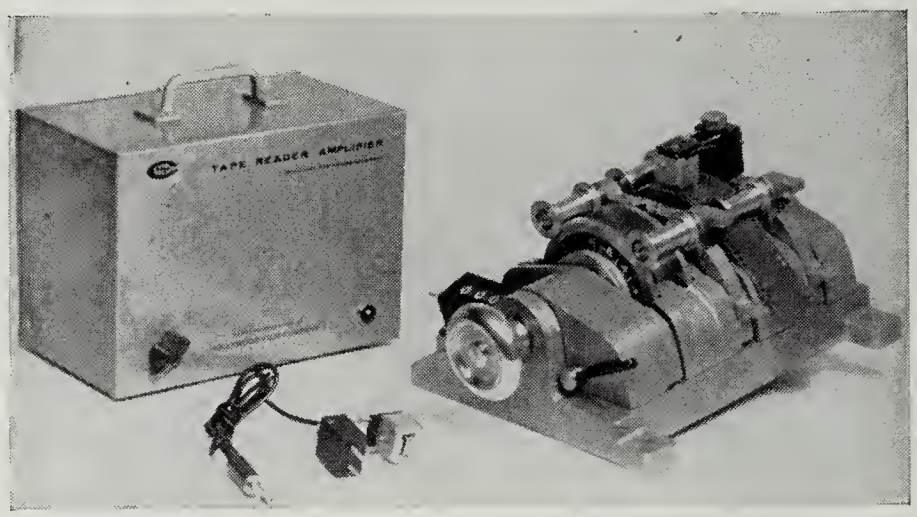
MANUFACTURERS OF SOUND-ON-FILM RECORDING EQUIPMENT SINCE 1931

SYNCHRONIZER HEAVEN





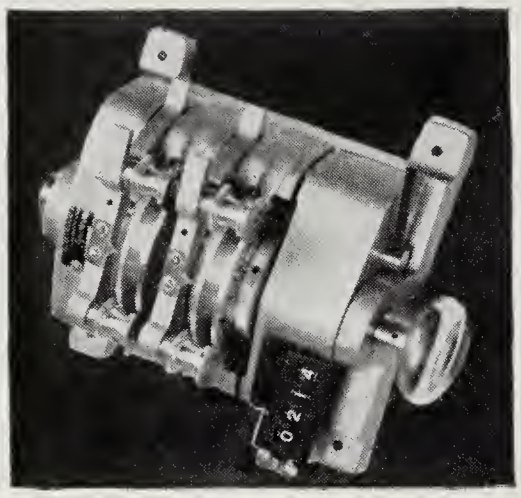
35mm 3-Way Synchronizer **$165.00**



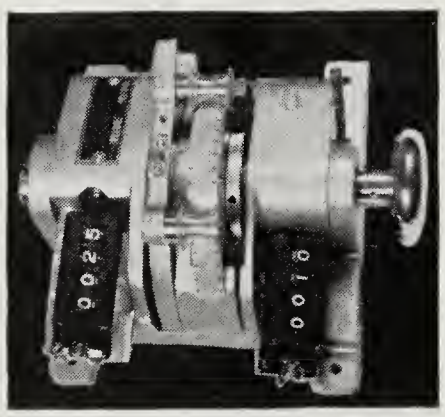
1. Fastens to roller arm of synchronizer.
2. Sync dailies quickly without using editing machine.
3. Ideal for checking sound track for words or effects to be replaced.
4. Fastest and most accurate in locating beginning and ending of words.
5. Tape head can be slid up and back to read a track in any position of fullcoat or magnastripe.

Selling Price:

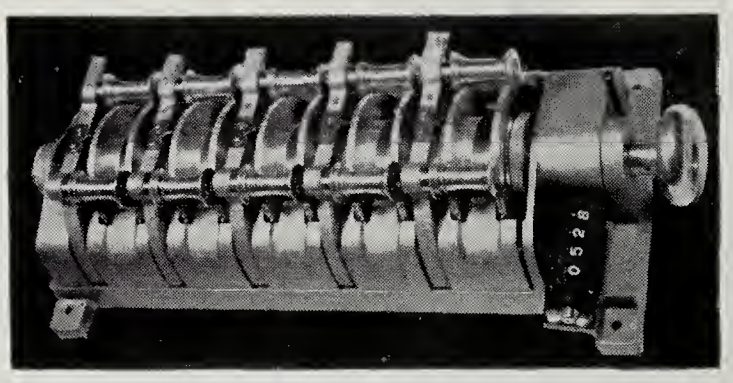
HFC Magnetic Tape Reader Synchronizer attachment	$34.50
HFC Magnetic Tape Reader Amplifier	55.00
Complete Unit	89.50



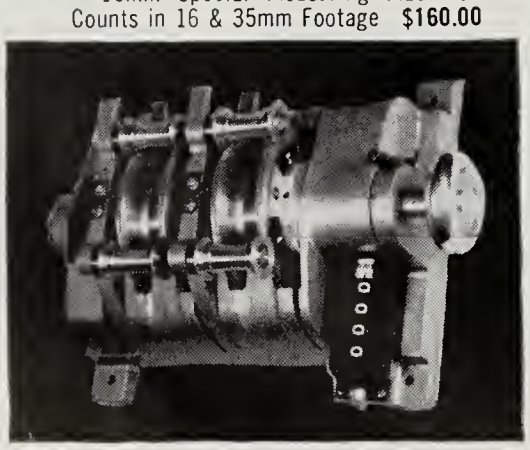
16mm 2-Way Synchronizer **$125.00**



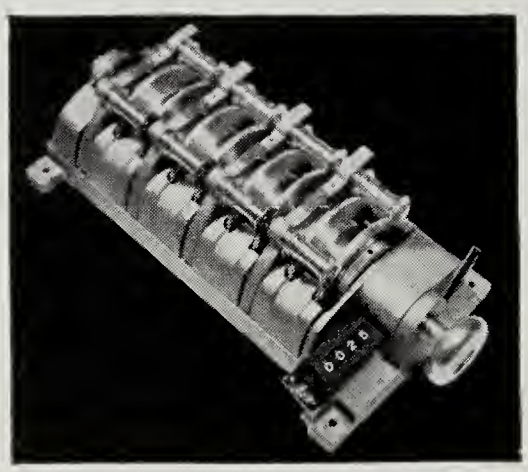
16mm Special Measuring Machine.
Counts in 16 & 35mm Footage **$160.00**



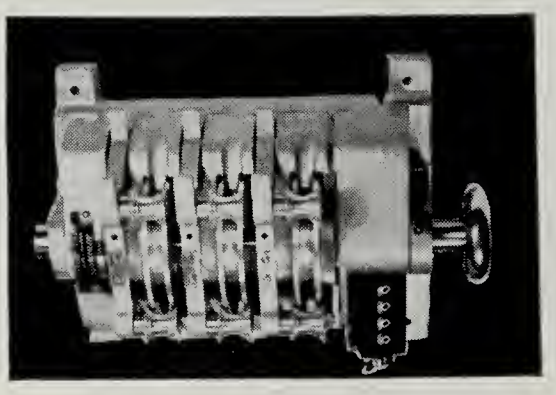
35mm 5-Way Synchronizer **$225.00**



35mm 2-Way Vistavision Synchronizer with
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35mm 4-Way Synchronizer **$190.00**



16mm 3-Way Synchronizer **$165.00**



65-35mm Combination Synchronizer **$380.00**

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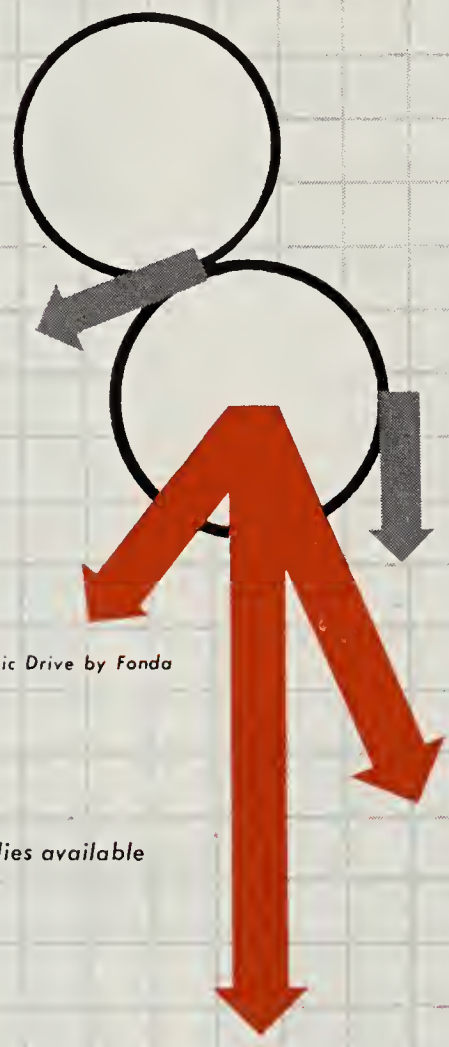
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FONDA—America's finest film processing machine

BULLETIN BOARD

(Continued from Page 336)

pher and one time a top cameraman at Warner Brothers Studio, last month embarked with Mrs Polito for a 3 months' tour of Europe.

• • •

Arthur Miller, past president of the ASC, after turning over the gavel of office of the Society's presidency to George Folsey last month, set out for a two months' fishing trip on the Mexican west coast.

• • •

Benjamin Berg, ASC, whose one-reel short subject on life of famous artist Goya is proving a boxoffice success, is planning to expand his film production activities. New production soon to go before cameras will take him to South America and Italy.

• • •

AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 8, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes nonresident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

•

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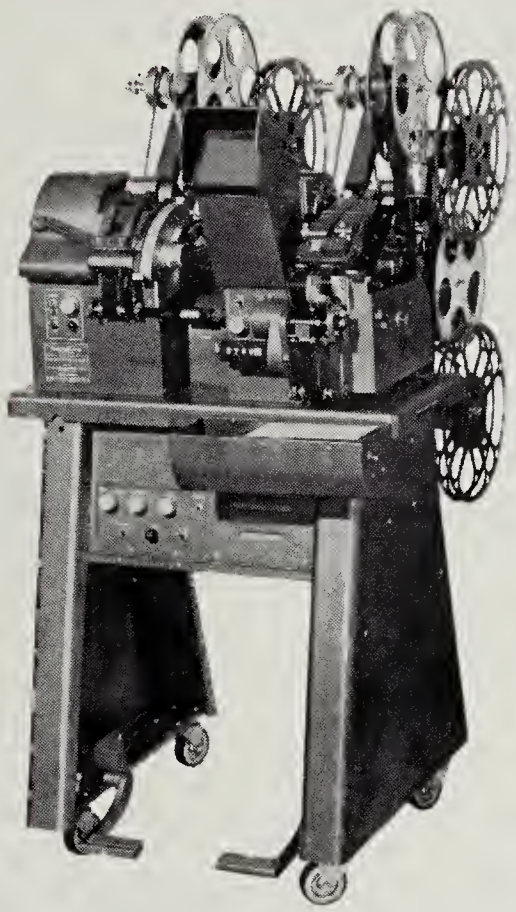
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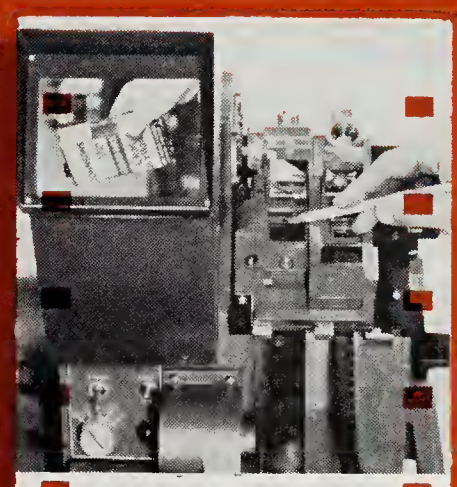
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Irving Glassberg
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NEW J. G. McAlister "EDIMAC"

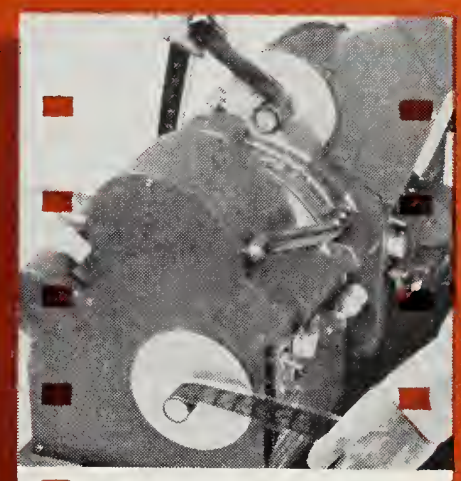
RUNS 16MM AND 35MM SOUND AND PICTURE SIMULTANEOUSLY



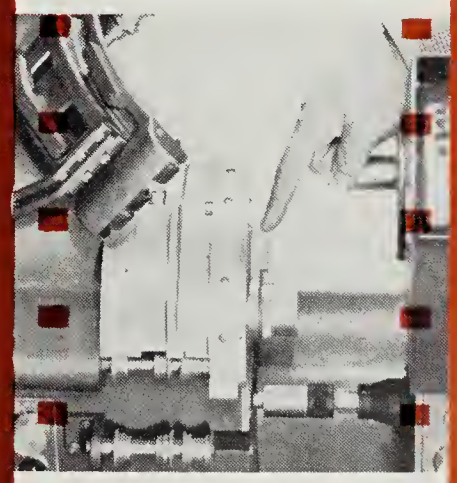
Now, for the first time, one editing machine runs 16mm film and 35mm film simultaneously with 16mm magnetic-optic and 17½mm magnetic or 35mm magnetic-optic



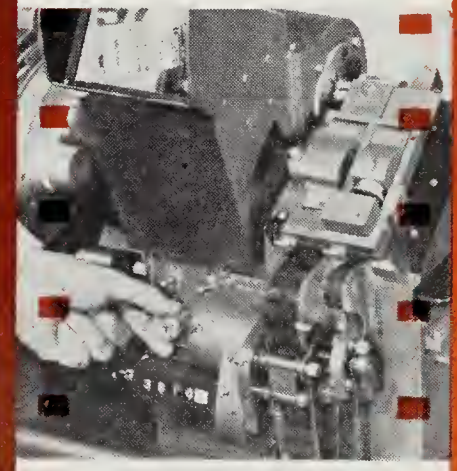
Marking and retouching 50% easier! Optical unit swings completely away, revealing the **entire** frame, unobstructed!



Rewinding operations simplified by a high-speed rewind on picture head, a low-speed rewind on sound head—and a new idea in foot pedal control.



Run negative film with absolute safety. Magnetic head never touches film while optic is in use.



Adjust picture brilliancy at the turn of a dial. Variable light control aids in pre-viewing light and dark prints.

The EDIMAC cuts editing time up to 30%. Nothing is complicated. Every operation is simple, quiet, easy for anyone familiar with standard equipment. The principle's the same. But what an improvement!

WRITE TODAY FOR COMPLETE INFORMATION, including price F.O.B. Factory and free descriptive booklet.

EXCLUSIVE FULL YEAR GUARANTEE!
J. G. McAlister guarantees the new EDIMAC against all mechanical defects for one full year. No other editing equipment manufacturer can promise such trouble-free performance.

The newest, most advanced lighting and production equipment is made by

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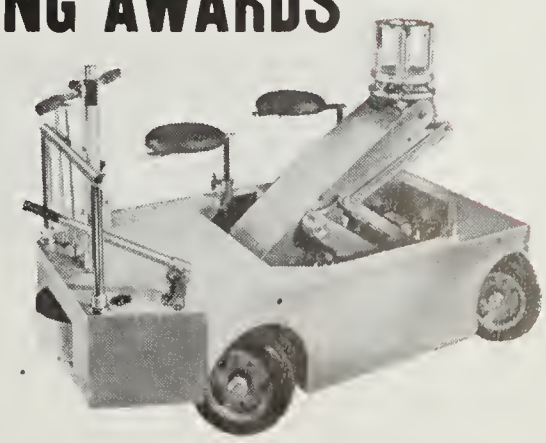
And that's not all. Scores of other important features boost your output, enhance your skill, solve all major editing problems.



TWO DOLL(IE)S WIN SUPPORTING AWARDS

Miss Jo Van Fleet wins Academy Award for "Best Supporting Actress" in "East of Eden," Warner Brothers.

J. G. McAlister Dual Steering "Crab Dolly," invented by Mr. Steve Krilanovitch, wins Academy Award for "Best Support of Camera" from Academy of Motion Picture Arts & Sciences. The J. G. McAlister "Crab Dolly" is being used in *all* motion picture studios.



ONE CAMERA

16mm or 35mm

in 10 SECONDS!

Camerette 16/35

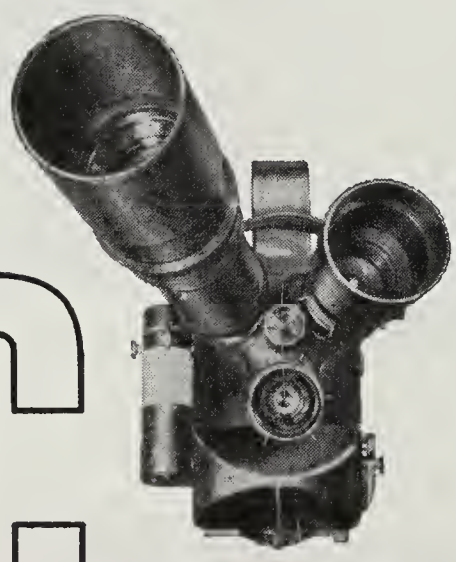
Reflex Motion Picture Camera

The perfect camera for the motion picture film maker working in both 16mm or 35mm color or black and white.

LOOK AT THESE ADVANTAGES—

- The same lenses, same motor drives, same sound blimp and accessory equipment used for both 16mm or 35mm — to convert simply change the magazine.
- Precise rugged movement
- Reflex viewing
- 200 degree adjustable shutter
- Divergent three lens turret
- Automatic film gate 400′ magazines 16 or 35mm — the 16mm magazine will accommodate daylight spools as well as standard core load.
- Light weight — only 14 pounds with 3 lenses, 400′ magazine, and 6/8 volt motor.

Write for brochure



Camerette

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Manufactured by Ets. Cine. Eclair, Paris

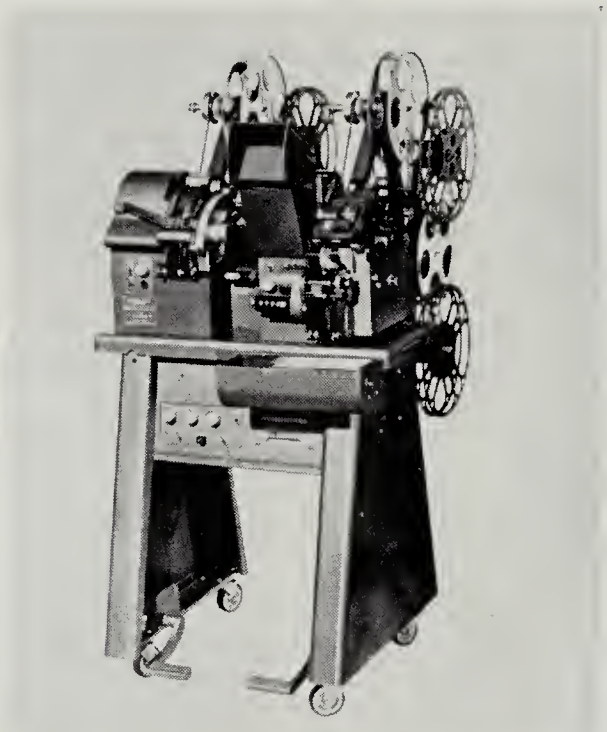
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CAMERA EQUIPMENT CO.

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WHAT'S NEW

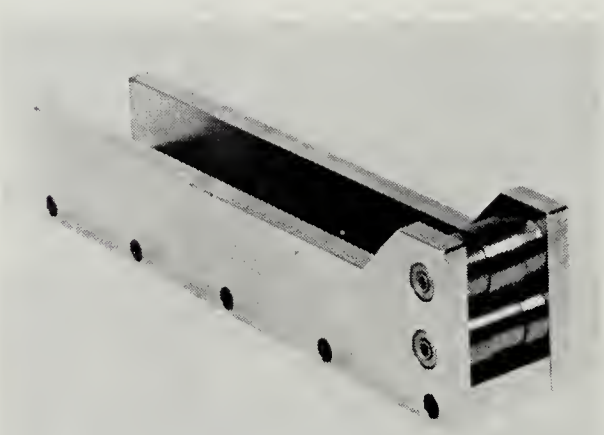
. . . in equipment, accessories, service



Edimac Film Editor

Bardwell-McAlister, Inc., 1117 No. McCadden Pl., Hollywood 28, Calif., offers the Edimac four-way editing machine that takes 16mm film and 35mm track, 16mm picture and 16mm track, 35mm picture with 16mm sound, or 35 mm picutre with 35mm sound. It will also playback 17½mm magnetic sound film.

Other features include simplified rewinding, adjustable picture brilliancy, electric hand-brake controls both picture and sound films, and 50% faster threading.



Film Slitter

Precision Laboratories, 1139 Utica Ave., Brooklyn, N. Y., announces a new precision-made film slitter available on special order, built according to SMPTE or customer's standards. Base is chrome plated steel; blades are of the finest hardened chrome steel mounted in bronze bearings and are readily replaceable.



Tricycle Dolly

Cinekad Engineering Co., 500 West 52nd St., New York 19, N. Y., announces a new collapsible tricycle dolly designed especially for location work. Features include heavy-duty 8″ rubber-tired casters, rear-wheel steering, adjustable seat for camera operator, leg-lock clamps, and leg nests for baby tripod. Weighing 42 pounds, dolly folds into compact, easy to carry unit.

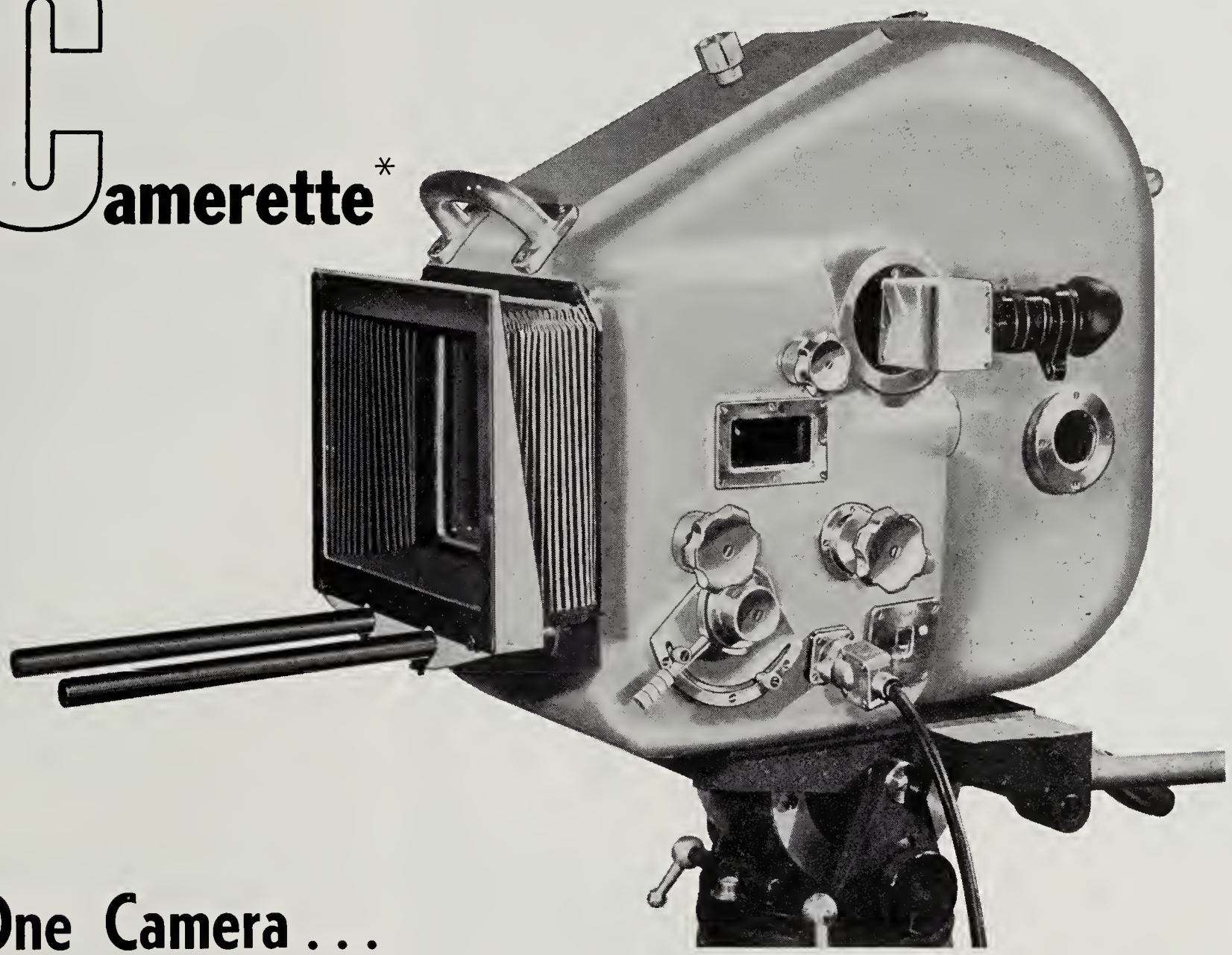


Anamorphic Lens

The Pictorial Company, 2910 Broad St., New Castle, Penna., announces a series of three Picto-Scope anamorphic lenses for use on any 16mm or 35mm motion picture camera or projector. Compatible with CinemaScope, the "Professional" model may be used with a 25mm lens on 16mm cameras, and a 45mm lens on 35mm cameras. Model illustrated may be used with zoom lenses. Use of lenses requires no increase in exposure.

(Continued on Page 344)

Camerette*



One Camera . . .
One Blimp . . .
For Both 16mm and 35mm Cinematography

- Reflex viewing through taking lens at all times.
- External Follow-focus control.
- External iris control.
- Accommodates 18.5mm through 100mm objectives.
- Quick-change magazines and lenses; retractable camera carriage.
- 110-V single-phase and 220-V 3-phase synchronous motors.
- Lightweight magnesium alloy construction.
- Completely soundproof.

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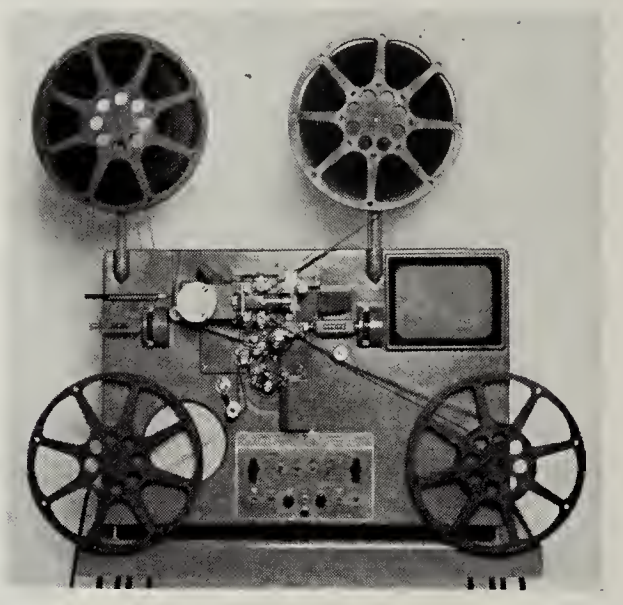
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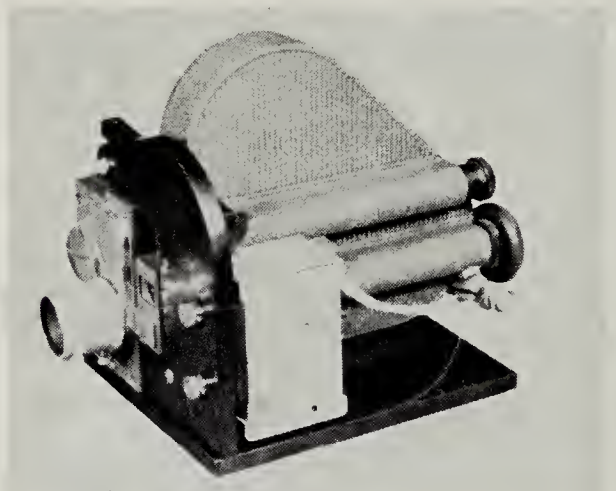
WHAT'S NEW

(Continued from Page 342)



16mm Editing Machine

M. W. Palmer, 468 Riverside Dr., New York, N. Y., announces a new three-channel 16mm film editing machine. It provides a composite film channel for sound and picture on one film, a picture channel with 5" x 6½" brilliant picture, and an optical sound track channel with stabilizer, sound drum and amplifier. Sound head for magnetic track is also available at extra cost. Provision is made for instantaneous film marking and mark shows on image screen as it is being made.



Solenoid Camera Control

Sample Engineering Co., 17 No. Jefferson St., Danville, Ill., announces a new solenoid control for the Pathe Super-16 (Webo-M) cine camera. Operating on 60 cycle AC current, it uses 1/5 ampere of current, and can be used to operate camera for taking single exposures automatically or manually timed, or for remote control at normal speed. Design is such that all camera features are immediately accessible. List price is $35.00 for solenoid, mounting plate and bracket.

Meter Price Reduced

Kling Photo Corp., 257 Fourth Ave.,

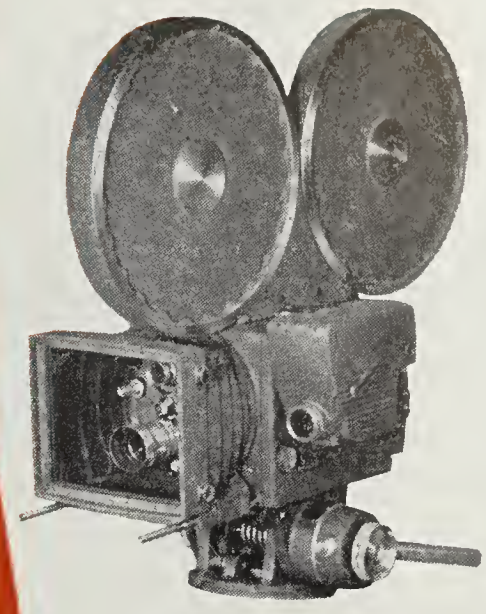
(Continued on Page 386)

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AURICON "1200"

Full NEW CAMERA Guarantee! the World's largest stock of motion picture cameras in both 16mm and 35mm sizes means a selection of all types, all focal length lenses, immediate delivery from stock, and the lowest prices **anywhere** for equal quality.

16mm

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35mm

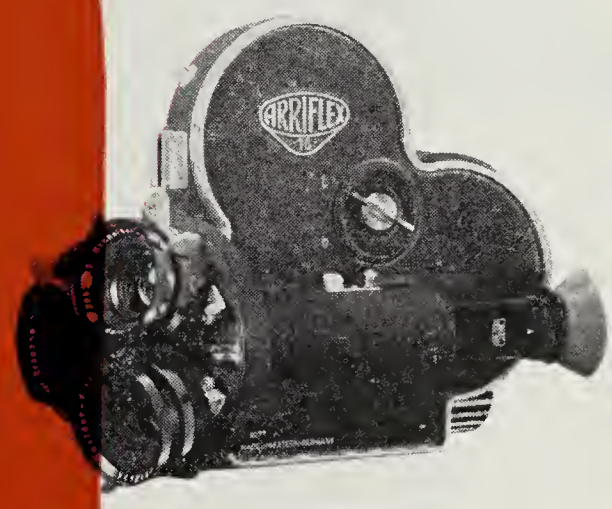
Acme
Akeley
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Bell & Howell
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70mm

Hulcher



BELL & HOWELL 35MM STANDARD



ARRIFLEX

and all camera accessories: magazines, motors, tripods, etc.

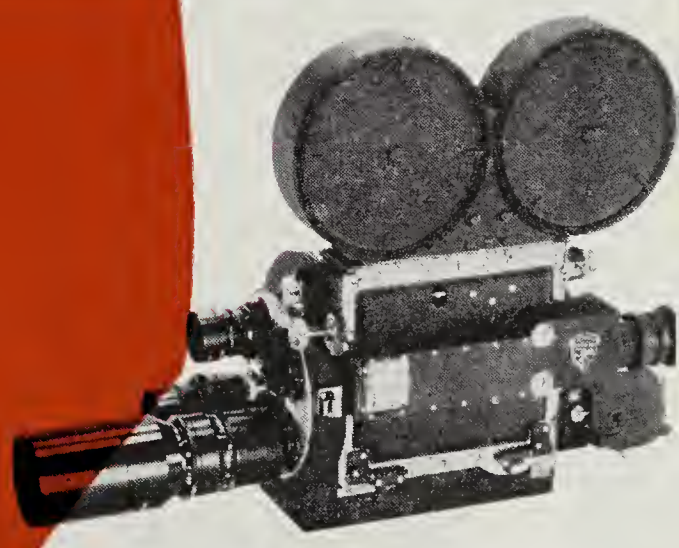


MITCHELL MODEL NC

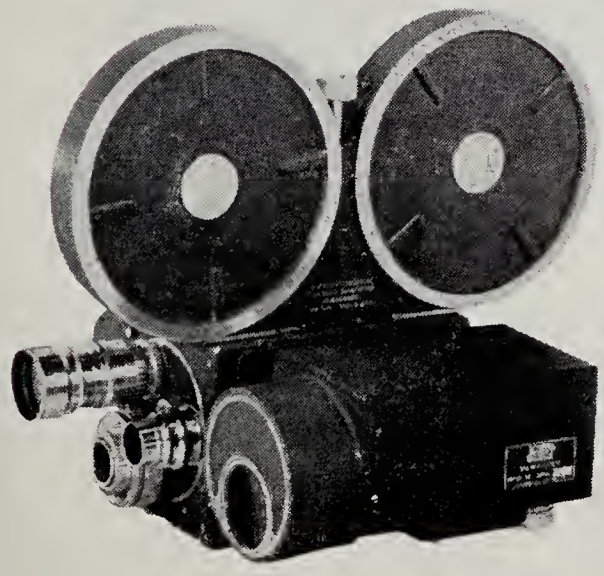
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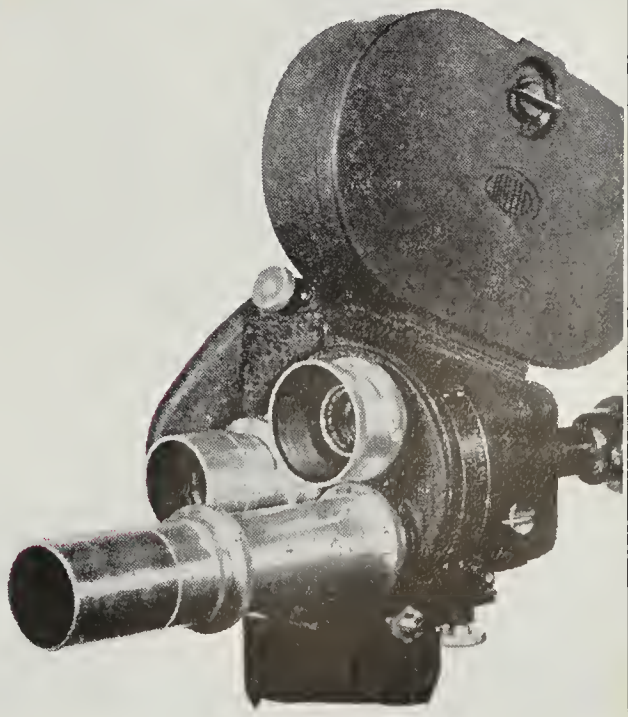
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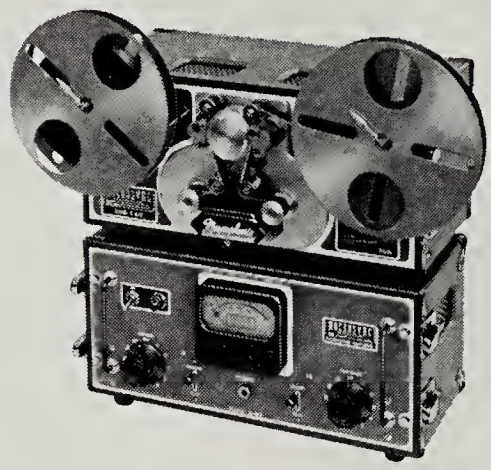


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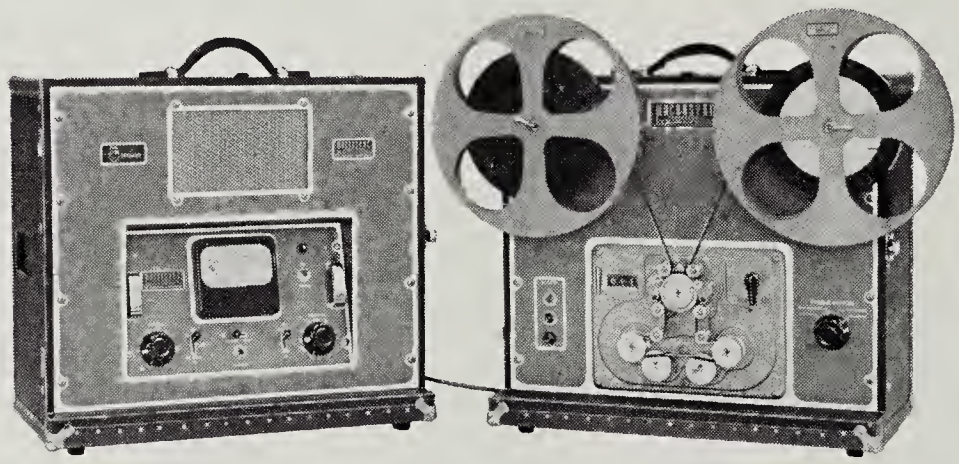
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model
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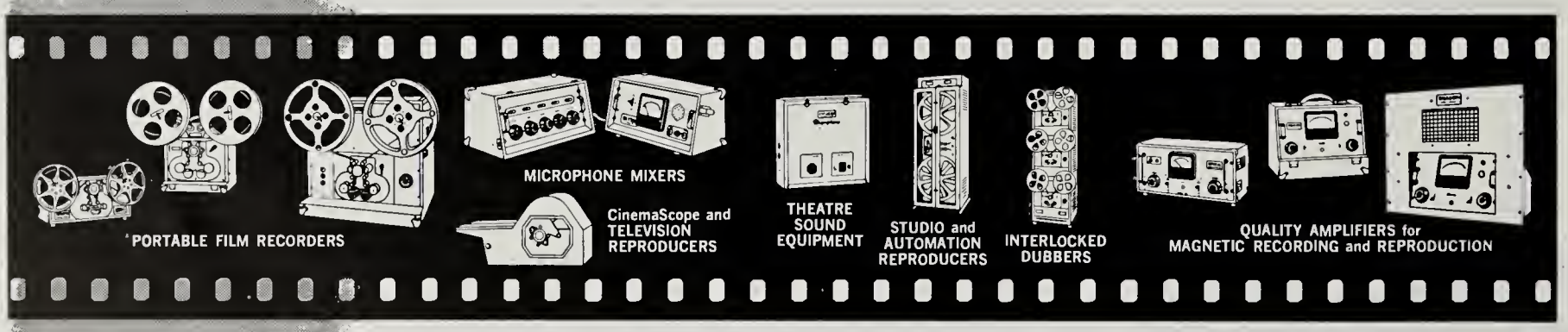


models
602-E-5 (16mm)
702-A-5 (17½mm)
135-A-5 (35mm)

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SAN FRANCISCO—Brooks Camera Co., 45 Kearney St., San Francisco, Calif. EXbrook 2-7348.

CANADA—Alex L. Clark, Ltd., 3745 Bloor St., Toronto 18, Ontario. BElmont 1-3303.

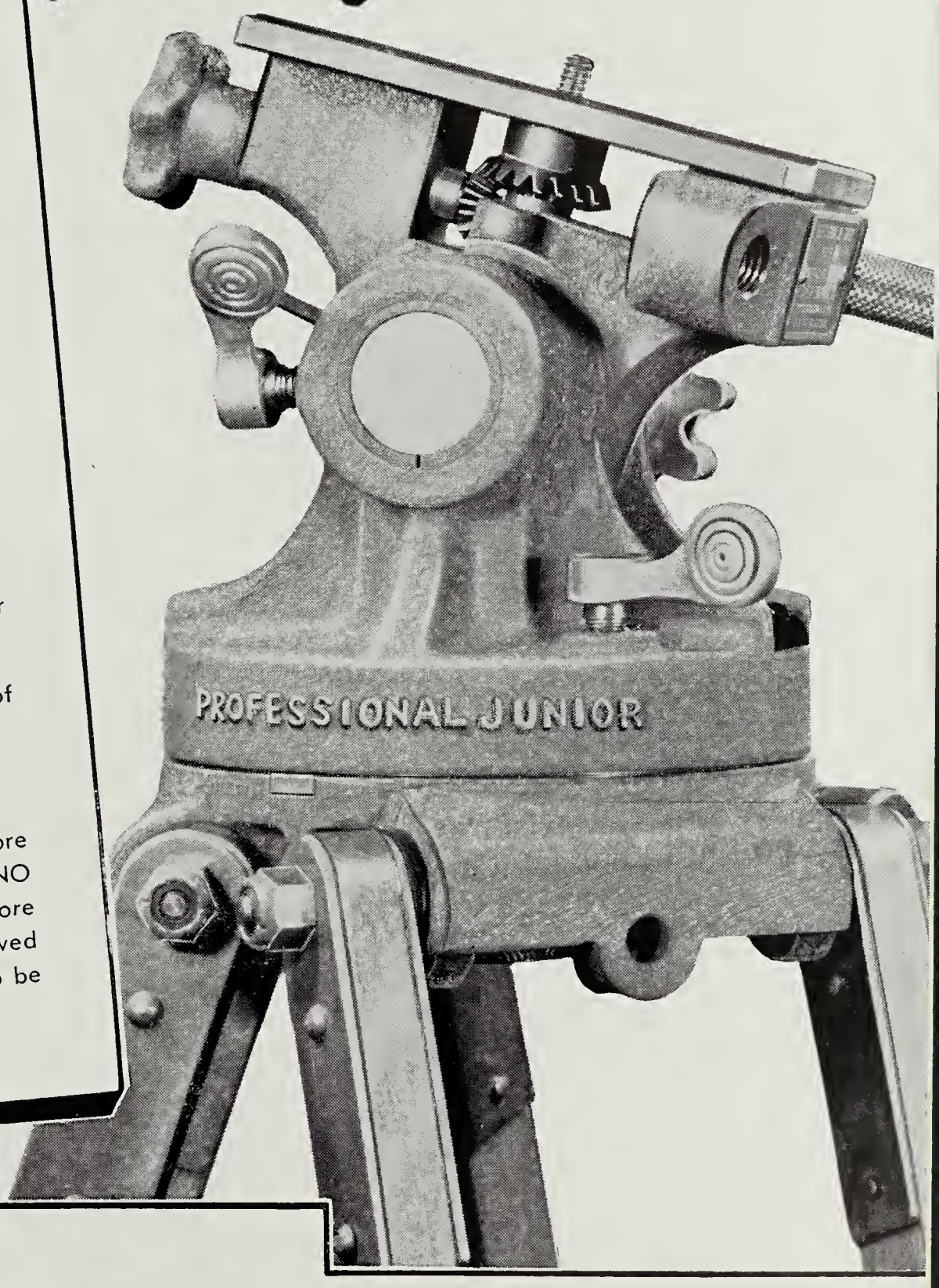
Tripod Perfection!

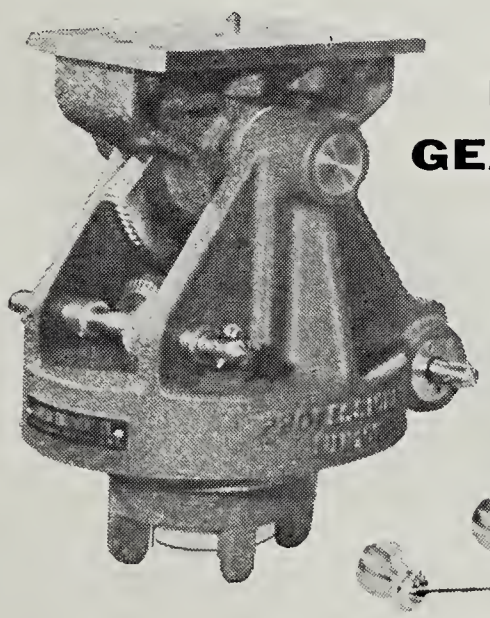
IMPROVED PROFESSIONAL JUNIOR TRIPOD

Always a great tripod, the new improved PROFESSIONAL JUNIOR with the removable head, now features the following improvements:

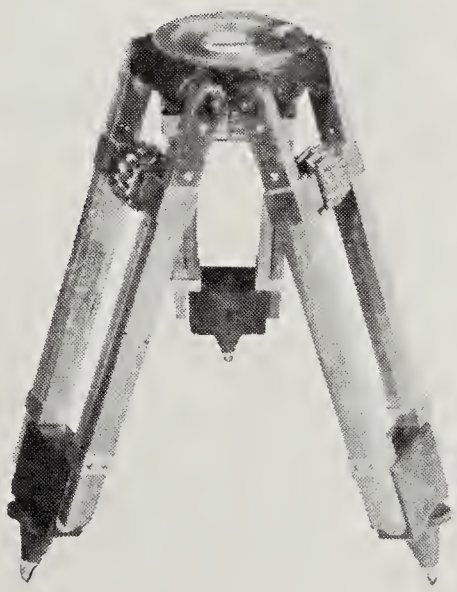
1. Simplified camera attaching method with easily accessible knob—no fumbling underneath camera platform—quick, easy, positive.
2. Adjustable telescoping pan handle—make it shorter or longer to suit your needs.
3. Additional pan handle sockets for left, right or reverse tilt.
4. Larger gripping area and sturdier construction of tilt and pan locking levers.
5. New tie-down eyelets in flange.

You'd expect this outstanding tripod to cost a lot more money, but here's the big surprise—THERE IS NO ADVANCE IN PRICE! For better, smoother, more efficient performance—see, test, try the improved PROFESSIONAL JUNIOR today. You won't want to be without it.





Professional Junior
GEARED HEAD
interchangeable with Friction Head on same tripod.



New Professional Junior Adjustable wood
BABY TRIPOD
—for friction and geared Heads
Has substantial shoe and spur.
Measures from floor to flange 25" extended—17" collapsed.
High-Hat Low Mount Available

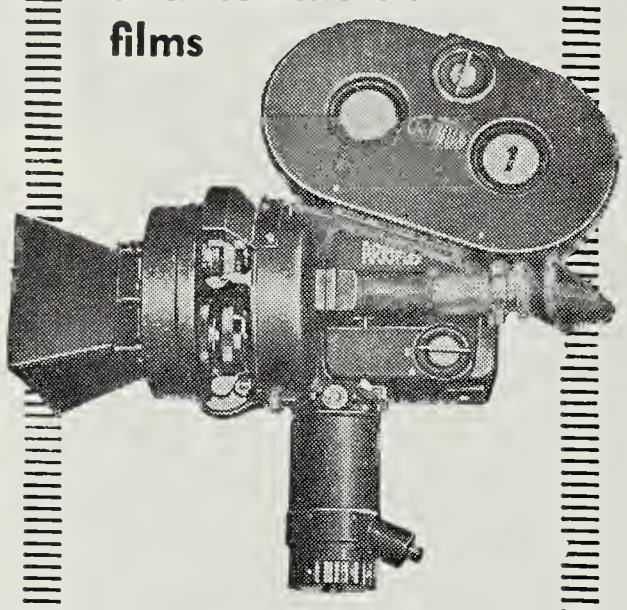
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ARRIFLEX

New 35 mm Model 2A
With 180° Shutter

A TRULY GREAT CAMERA

for TV, Newsreel and commercial films



For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200' or 400' magazine. Write for free folder.

Blimp now available.
16mm ARRIFLEX also available.

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315 West 43rd Street, New York 36, N. Y.

INDUSTRY NEWS

Both feature and TV film production continues high in Hollywood . . .

16mm color film laboratories are now in the throes of changing over to the new Eastman 5269 reversal color print stock from the old 5265 stock.

The new 5269 stock is said to produce prints having finer grain and higher definition than old stock. Moreover, it is less contrasty so that the reproduced picture is approximately the same in quality as the original.

Color prints made on the new stock will have a black-and-white track instead of the silver sulphide track, which has been the practice in the past, and this should greatly improve the sound track used for printing. This means that the sound track must be a negative.

Lab men report that second-generation prints made on 5269 stock from masters made on the same stock are highly satisfactory.

• • •

The Association of Cinema Laboratories re-elected all incumbent officers in the 1956 election held during the Association's annual get-together in New York early this year.

Official announcement of results released last month reveals that the following industry executives will continue their posts during 1956: Neal Keehn, The Calvin Co, President; Russell Holslag, Precision Labs, V-pres; Byron Roundabush, Byron, Inc, Secretary; and George W Colburn, Colburn Lab, Treasurer.

Purpose of the Association is the development of uniform film laboratory methods and practices.

• • •

Television film production in Hollywood continues to provide the greatest field of employment for cinematographers, with around 45 cameramen directing the photography of sponsored TV films each week as against an average of 30 shooting feature films in or for the major studios.

• • •

Approximately one-third of Hollywood-produced TV shows—more than 16—lost sponsors this season, according to *Daily Variety*

In the field of Hollywood feature film production, *Variety*, on May 25th, revealed the following comparative figures which show present studio activity as compared with 1955

Allied Artists have started 12 pictures this year as against 11 this date last year

Metro-Goldwyn-Mayer: this year to date, 11; last year, same date, 7.

Paramount: this year to date, 8; same date last year, 4.

Republic: this year to date, 4; same date last year, 12.

RKO: this year to date, 5; same date last year, 6.

Twentieth Century-Fox: this year to date, 7; same date last year, 7.

Universal-International: this year to date, 13; same date last year, 10.

Warner Brothers: this year to date, 5; same date last year, 10.

• • •

Of the twenty-eight features being filmed in Hollywood the week of May 28th, 9 were in CinemaScope, 7 in Vista-Vision, 1 in 65mm, and 11 in miscellaneous wide-screen formats (viz.: 185-to-1, etc.).

• • •

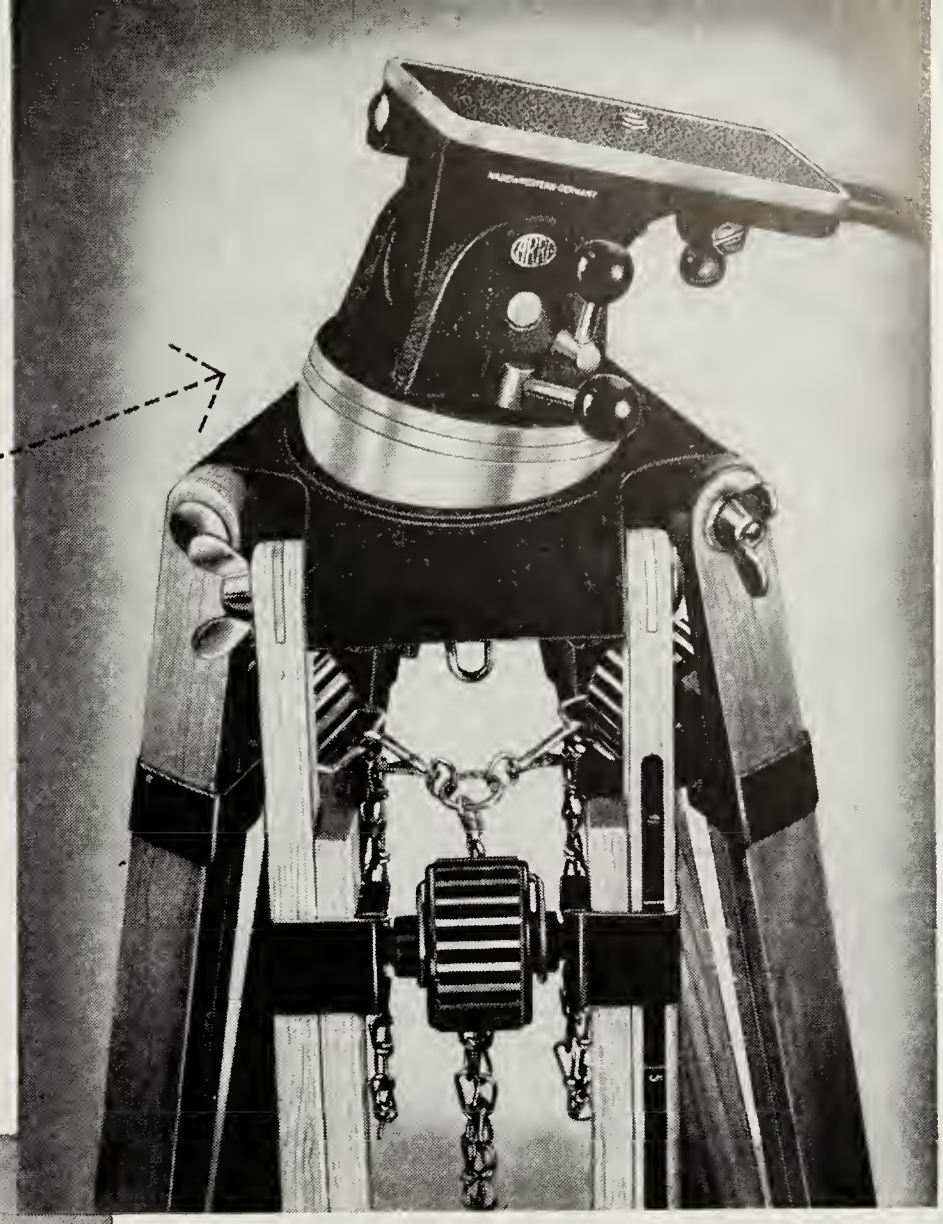
Details of a new type of target analysis or "gun camera," which emulates the human eye in that it automatically compensates for changes in light conditions, have been revealed by the U. S. Air Force.

The camera was designed and engineered by Fairchild Camera and Instrument Corporation of Syosset, N. Y. Installed on super-sonic jet fighter planes, the camera can be used to record details of aerial combat. The importance of the automatic exposure control can be readily understood when it is realized that the nose of fighter plane, engaged in a "dog fight," may be pointed at brilliant sunlit sky, and a few seconds later at a densely shaded area of the earth, as it maneuvers into firing position In previous cameras, this meant that portions of the film would be greatly over-exposed while other sections would be under-exposed.

With the new Fairchild camera the actual illumination received through the picture-taking lens can be compared 64 times a second with the illumination from a reference lamp inside the camera. If there is a difference, the lens diaphragm is changed to match the light level of the reference lamp, which insures proper film exposure. This is accomplished by a closed-loop system employing a transistor servo amplifier. The rate of response to a change in light is rapid. The system will drive or move the diaphragm 6 lens stops in 1.8 seconds.

(Continued on Page 384)

The Hemispherical Ball-Joint Head

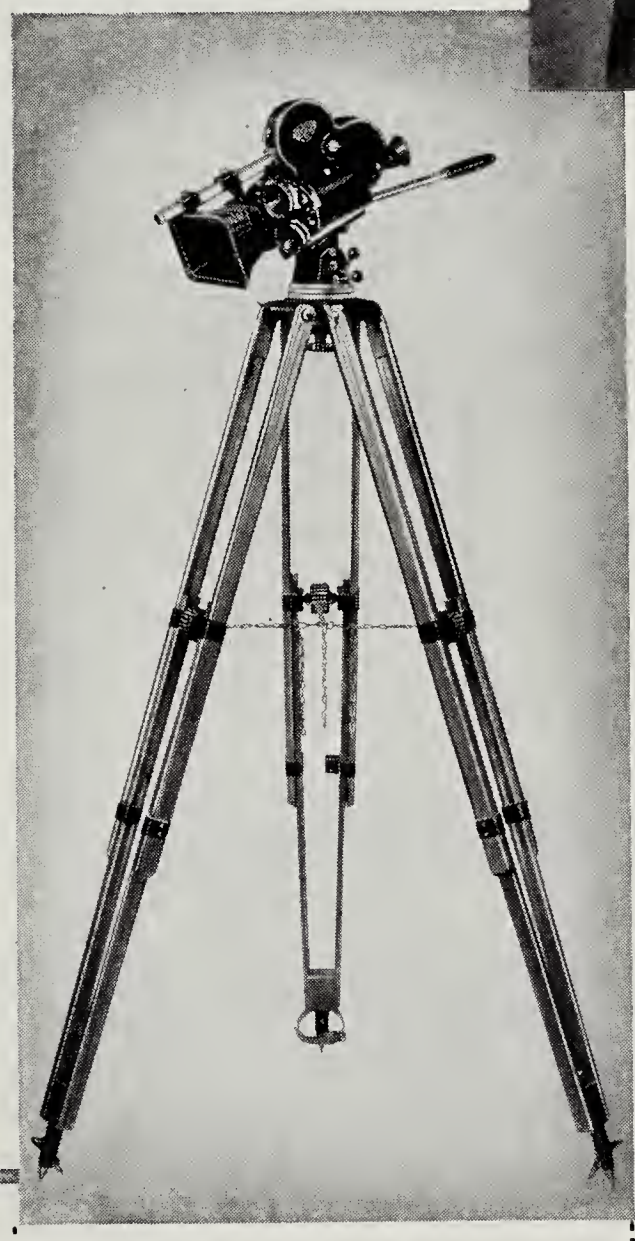


AN EXCLUSIVE FEATURE OF THE NEW

ARRI 16 TRIPOD

Here's the kind of tripod you'd expect from the maker of the famous Arriflex cameras — a tripod with the most advanced features in the field.

One outstanding Arri-exclusive is the Hemispherical Ball-Joint Head. No matter how uneven the ground or how tilted the tripod — this head permits you to level your camera without touching the tripod legs. And a built-in spirit level tells you when you're 'set'.



THE ARRI 16 TRIPOD

Also gives you these important features:

- **HEMISPHERICAL BALL-JOINT HEAD** — precisian-machined ball-and-socket (4½" diam.) perfectly mated for easy adjustment and secure locking action.
- **PAN and TILT LOCKS** — each cantrolled independently.
- **ADJUSTABLE PAN HANDLE** — canveniently lacated far optimum leverage — can be held under armpit leaving hands free ta manipulate lenses and camera.
- **SMOOTH PAN and TILT MOVEMENTS** — achieved through precise machining of all metal parts.
- **SPIRIT LEVEL** — far lining up camera.
- **PATENTED TRIPOD SCREW** — fits bath fareign and American tripad sackets. Outside thread section is far fareign cameras. When used with American cameras, it retracts, and inner "American thread" engages camera.
- **SINGLE LOCK COLLAR** — securely lacks each leg at desired extensian and automatically eqaulizes lacking pressure an bath shanks.
- **CALIBRATED LEG SCALES** — permit quick and easy setting of all legs to same extension.
- **ADJUSTABLE ANTI-SLIP CHAINS** — restrict leg spread and prevent tripod from falling.
- **TIE-DOWN EYELETS** — for securing tripod to floor.
- **TIE-DOWN LIPS** — far attaching to dally or clamps.
- **DUAL SPURS** — dauble, hardened steel tips assure firm, sure foating.
- **CONSTRUCTION** — legs made af seasaned beech for extra strength and sturdiness. Metal parts are made of brass, steel and aluminum — expased surfaces finished in black crinkle and chrome. Camera platfarm is leather-cavered.

FOR **LOW ANGLE** SHOOTING . . .

ARRI 16 SHORTY

Supplied less head. Uses Hemispherical Ball-Joint Head interchangeably with Arri 16 Tripad.



SPECIFICATIONS:

	ARRI 16 TRIPOD	ARRI 16 SHORTY
WEIGHT	13½ lbs.	8½ lbs. less head
WORKING HEIGHT		
Maximum	65 inches	21 Inches
Minimum	15 inches	9 inches
CLOSED	42 inches	22½ inches
PRICE	$175.00 complete	$90.00 less head

NOTE: Prices, Weights and Measurements Include Head, except where otherwise stated, and are subject to change.

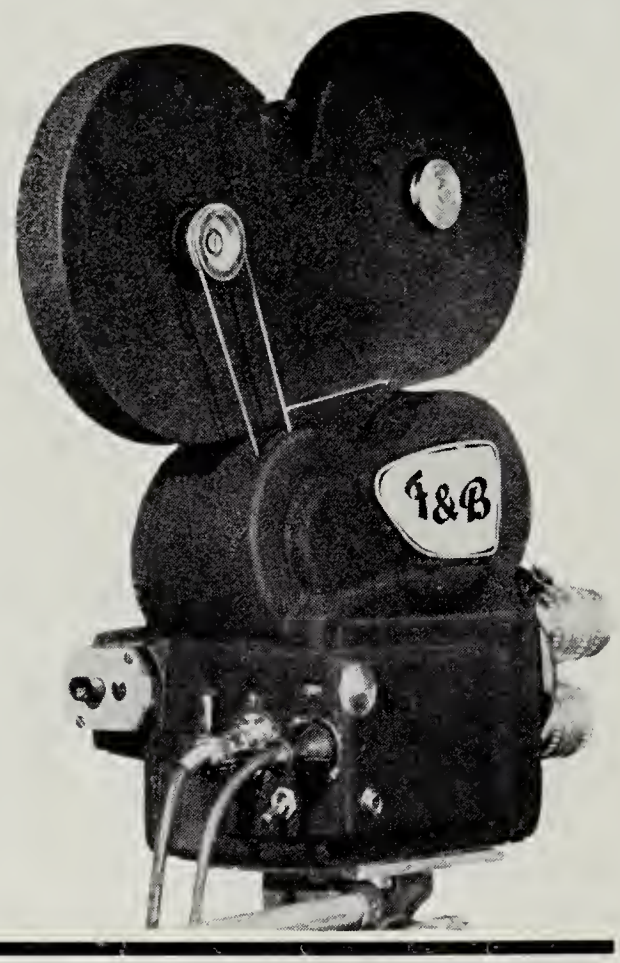
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NEW F&B "CINEVOICE 400"

F&B's new Cinevoice CONVERSION for 400 ft. magazines . . .

DOES NOT cut down your camera . . .
DOES NOT require an auxiliary motor . . .
CAN STILL be used as the original 100 ft. camera when necessary.



A special needle-bearing take-up system and ball-bearing magazine shafts make possible the superbly smooth, steady and jam-free operation. Either Mitchell or Bell & Howell 400 ft. magazines may be used on F&B conversion; and, in 10 seconds, the magazine can be removed, the light trap closed, and the Cinevoice is ready for operation as a 100 ft. camera again.

PLUS . . . ALL THESE BUILT-IN FEATURES

1. SILENCED VEEDER footage counter.
2. Built-in behind the lens filter slot, with two filter holders.
3. Headphone jack built in camera.
4. Cannon plugs for all sound sockets.
5. Tripod socket rebushed with brass insert.
6. New neon signal light.

PLUS . . . COMPLETE REFINISHING . . .

Your Cinevoice camera and 400 ft. magazine completely overhauled, cleaned up and re-finished in beautiful, professional black crackle finish.

YET . . . F&B "CINEVOICE 400" IS THE LOWEST PRICED CONVERSION AVAILABLE . . .

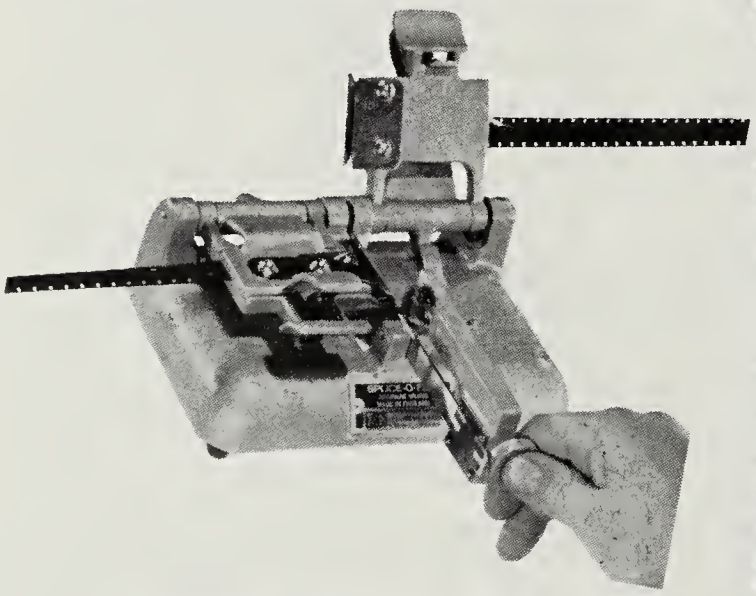
For Complete new outfits . . .
Turret Cinevoice plus F&B conversion and 400 ft. B&H magazine.....1200.00

PRICE ONLY $345.00
not including magazine.

AUTOMATIC SPLICER

SPLICE-O-FILM

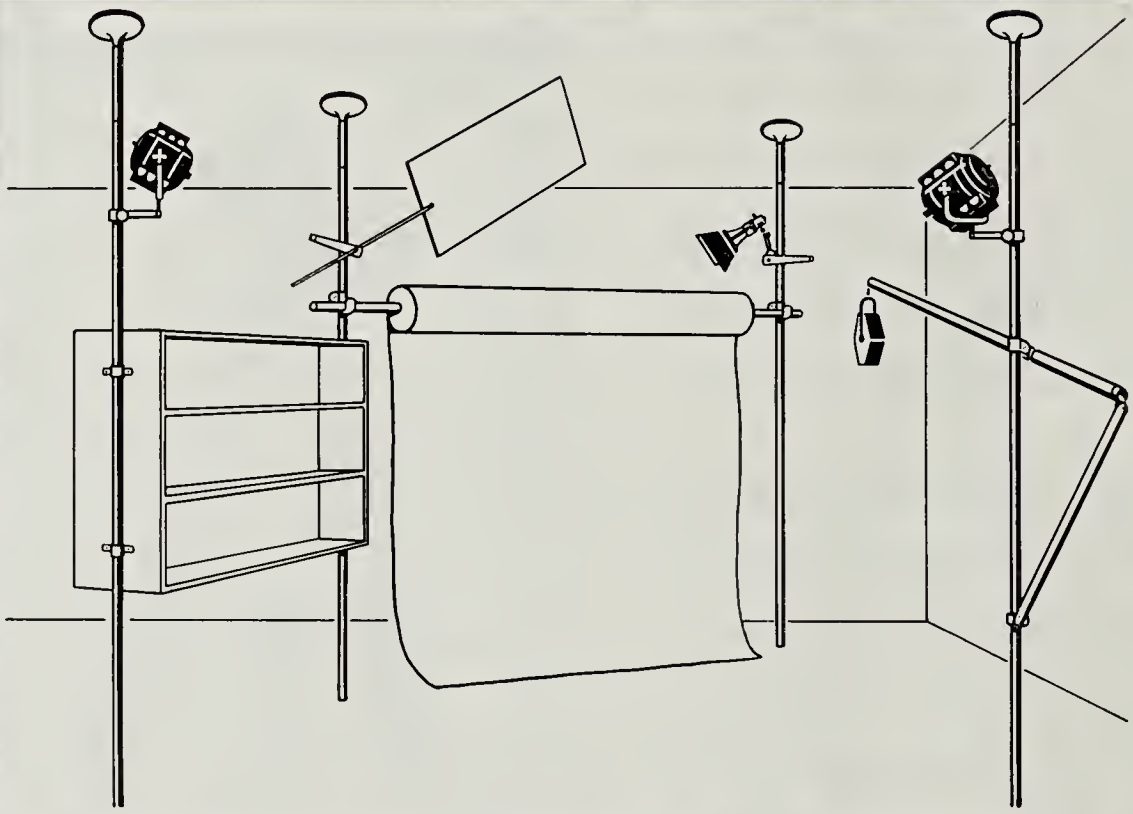
for 8mm-16mm combination & 35mm with the Exclusive PRESET SCRAPER!



A PERFECT SPLICE EVERY TIME AUTOMATICALLY!

The major cause of film failures is poor splicing . . . and the major cause of poor splicing is improper scraping (either too much or too little). SPLICE-O-FILM solves both of these problems with its automatic scraper that takes off exactly the right depth of emulsion every time . . . regardless of applied pressure. SPLICE-O-FILM is a precision tool . . . imported from England. It has a precision-ground, tungsten steel scraper that is preset and ready for making thousands of splices.

BROCHURE ON REQUEST



A NEW WAY TO HOLD THINGS UP . . . ANYWHERE . . .
LIGHTS - PROPS - BACKGROUNDS - MIKES
Without Nails or Screws - With

POLECAT



Adjust - push up - it's done.

POLECAT is o feotherweight, telescoping column of 1½ inch onodized oluminum with on exponsion spring in the top. Adjust it once to your ceiling height with locking collar. Then just spring it in ond out of ploce os you pleose. Rubber pods top ond bottom protect ceilings ond floors. *POLECAT can't be knocked over . . . ond tokes less floor space than a silver dollar.*

HOLDS 400 POUNDS. Makes a perfect, mobile, lightweight for lights. Two POLECATS with cross piece and fitting can be used to hold a roil of background paper, props, flats, etc. Perfect for location filming.

BROCHURE ON REQUEST

AVAILABLE NOW AT F&B

MILLER **Fluid Action** TRIPOD HEAD

Complete control for smoother ponning in both horizontol ond verticol positions . . . Full 360° horizontol movement. Fits F&B PRO-CINE TRIPOD.

ADAPTER PLATE $15.00 PRICE $113.50

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C. V. WHITNEY TOLD MERIAN C. COOPER "Get the Best"



The Stuntmen

COOPER asked JOHN FORD to have filmland's most gifted and daring stuntmen enact the hand-to-hand combat scenes. They were:

BILLY CARTLEDGE
CHUCK HAYWARD
SLIM HIGHTOWER
FRED KENNEDY
FRANK McGRATH
CHUCK ROBERSON
DALE VAN SICKLE
HENRY WILLS
TERRY WILSON

the **C. V. WHITNEY** Pictures, Inc., attraction

JOHN WAYNE in

THE SEARCHERS

co-starring

JEFFREY HUNTER • VERA MILES • WARD BOND • NATALIE WOOD

from a novel personally selected by C. V. WHITNEY, president

MERIAN C. COOPER, vice-president in charge of production

directed by JOHN FORD

Color by TECHNICOLOR · in VistaVision

soon to be presented by **WARNER BROS.**

C. V. WHITNEY TOLD MERIAN C. COOPER "Got the Best"

Then COOPER asked JOHN FORD to capture the full sweep of the novel, THE SEARCHERS. FORD took the entire company to Monument Valley where he got real Navajos. The entire tribe cooperated, portraying the roles of their former bitter enemies, the Comanches.

Among the Indians were:

AWAY LUNA
BILLY YELLOW
BOB MANY MULES
EXACTLEY SONNIE BETSUIE
FEATHER HAT, JR.
HARRY BLACK HORSE
JACK TIN HORN
MANY MULES SON
PERCY SHOOTING STAR
PETE GRAY EYES
PIPE LINE BEGISHE
SMILE WHITE SHEEP



The Indians

in the **C. V. WHITNEY** Pictures, Inc., attraction

JOHN WAYNE in THE SEARCHERS

co-starring

JEFFREY HUNTER • VERA MILES • WARD BOND • NATALIE WOOD

from a novel personally selected by C. V. WHITNEY, president

MERIAN C. COOPER, vice-president in charge of production

directed by JOHN FORD

Color by TECHNICOLOR · in VistaVision

soon to be presented by **WARNER BROS.**

BRILLIANT PERFORMANCE

That happy glow (limelight?) in Precision's corner is simply the radiance of a solid reputation for sound, careful and accurate film processing. Wotta performer.

Precision is the pace-setter in film processing. In the past, Precision found techniques to bring the best out of black and white or color originals. In the present, facilities are the profession's very best for any of your processing needs.

And, in the future, Precision will, as usual, be first again (depend on it) with the newest developments to serve you better.

you'll see  **and hear**





PRECISION

FILM LABORATORIES, INC.

21 West 46th Street, New York 36, New York

A DIVISION OF J. A. MAURER, INC.

In everything, there is one best . . . in film processing, it's Precision



INSPECTING THE magnetic head assembly in Ampex Corporation's new Videotape recorder is Charles P. Ginsburg, Senior project engineer in charge of video development for the company, and Philip L. Gundy, manager of the company's audio division. First to use the equipment will be the NBC and CBS television stations in Hollywood.

Movies On Tape

Magnetic movies are here. Ampex whips the high tape speed problem and demonstrates its first practical video-tape recorder for black-and-white pictures.

By FREDERICK FOSTER

FROM A PRACTICAL standpoint, the electronic recording of motion pictures is now an accomplished fact.

No recent development relating to motion picture production has been watched with greater interest than that which promised the recording of movies on film by electronic means. First to announce development of such a system was Bing Crosby Enterprises which unveiled its system for the press and industry several years ago. Radio Corporation of America followed a year or so later with announcement of its system, which was aimed for the television industry. No practical equipment has been marketed by either company to date.

Last month, Ampex Corporation, a leading manufacturer of magnetic recording equipment, demonstrated its Videotape recorder for the television and motion picture industry. The Ampex is a complete record and playback unit capable of recording and reproducing commercial monochrome television material. It handles both video and audio information concurrently operating at tape travel speed of 15 inches per second, and utilizing magnetic tape two inches wide.

The machine was designed specifically for the purpose of television program delay, and it is for this purpose only that it will be first employed, according to Ampex. Both NBC and CBS have placed orders for the equipment which is expected to be delivered and put into operation late this month.

However, the equipment's potential as a means of producing motion pictures was the subject of much speculation during the recent convention of the Society of Motion Picture and Television Engineers in New York. Addressing the convention, Ampex's R. H. Snyder said, "Any speculation on the replacement of the 35mm camera by Videotape is, in our belief, foolish at this time."

Mr. Snyder stated that it might be possible for a motion picture director to shoot scenes simultaneously in film and in Videotape and immediately review the tape recording while his cast and sets were still assembled. "This procedure could," he stated, "reduce production time and costs in movies." However, video tape picture quality is simply not comparable with ordinarily good original film, and not even remotely comparable to the new larger-negative film processes." Mr. Snyder revealed that Ampex sees "no immediate application for video tape here, and probably very little even in the future."

The new Ampex video tape recorder system records both picture and sound on a single magnetic tape two inches wide. Picture quality is considerably better than that obtained with current kinescope techniques using photographic film, according to Charles P. Ginsburg, Senior Project Engineer in charge of video development. The "gray scale"—the ability to reproduce accurately all shades from black to white, is inherent in this new video magnetic tape recording system. On the other hand, the gradient from black to white is not uniform in photographic film.

Resolution—the measure of the clarity of the picture—is far beyond the capability of the average television receiver. Thus, when a tape recorded program is telecast, the limitation of picture quality will be in the home receiver rather than in the quality of transmission.

Perhaps even more important than the reproduction of recorded programs with "live" telecast quality are the opertional and economic advantages the Ampex Videotape Recorder offers the televison industry. Programs can be recorded directly from the TV camera, from a TV receiver, from television

transmission lines or from microwave relay systems. Just as with tape recorders, the program can be imemdiately replayed with no processing of any kind necessary. Considerable economy can be effected by erasing the recorded signal when it is no longer needed and reusing the tape to record another program. This is in contrast to photographic film which cannot be re-used after it has once been exposed.

Once the equipment has been installed and adjusted, operation is as simple as that of an audio tape recorder. To record a program. the operator presses one button to start recording. To play a recorded program, he simply presses the playback button.

The machine operates on the same basic principles employed in a regular audio tape recorder. Electrical signals are passed through a coil around an electro-magnet known as the recording head. The strength of the magnetic field in the recording head at any time depends on the electrical current in the coil at the given instant. In turn, the magnetic field impresses a pattern on the magnetic surface of the tape as it passes the recording head. The pattern on the tape, therefore, corresponds to the electrical signals in the coil on the recording head. Since the electrical signals are generated by the TV camera, the pattern on the tape corresponds to what the camera "sees" at any given instant.

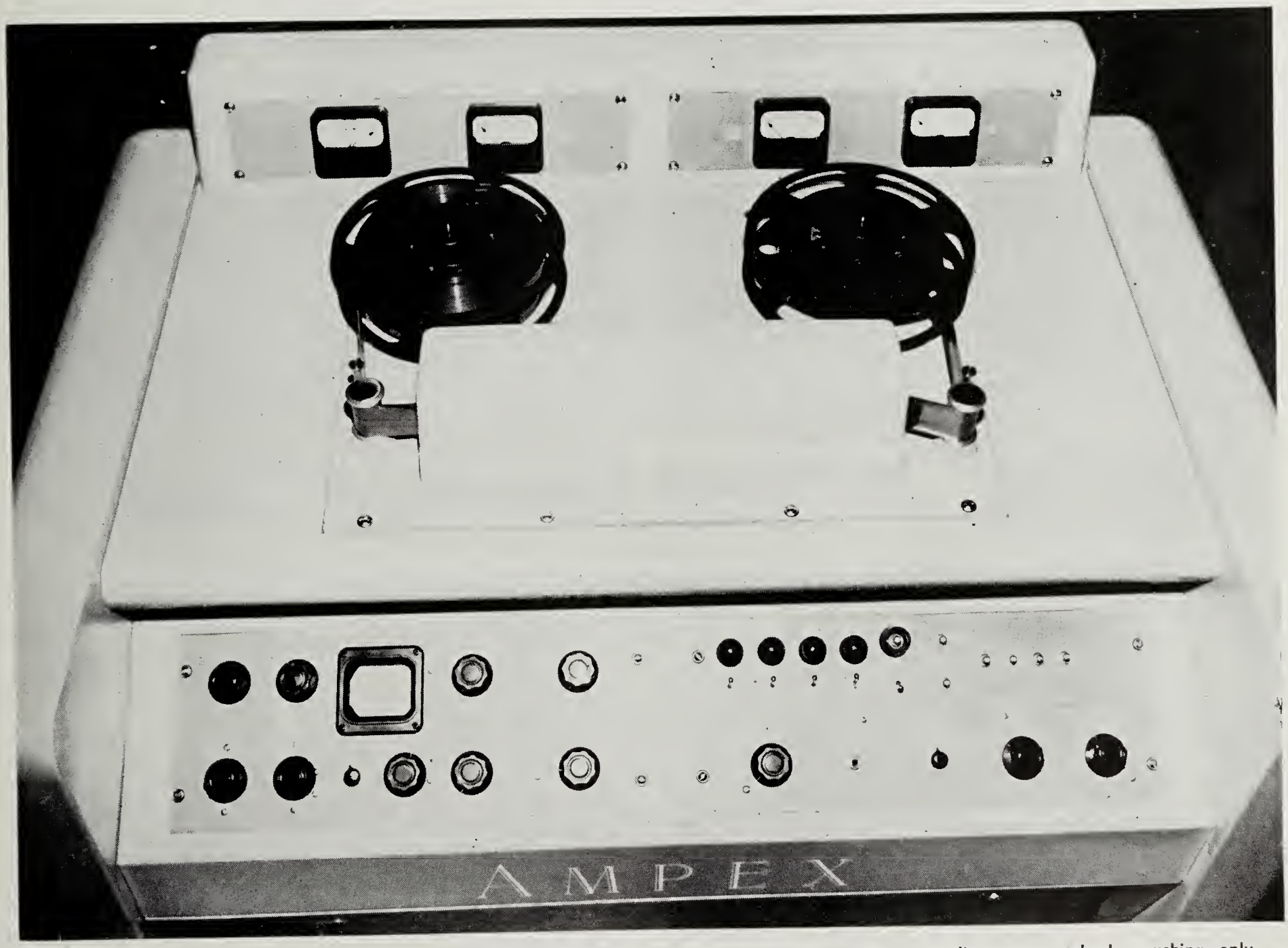
To reproduce the picture, the tape is passed across the same magnetic head. The magnetic pattern on the tape induces a current in the coil around the head. Since the pattern corresponds to the original picture, the induced current can be fed to a television transmitter just as though it were coming directly from the TV camera. To obtain the 4-megacycle response needed for video recording, tape speed would have to be 2,000 inches per second. At that rate, a reel of magnetic tape 14 inches in diameter would record only 29 seconds of program material.

Ampex engineers have developed a system which permits a tape speed of only 15 inches per second, permitting more than a full hour's program to be recorded on a single 14-inch reel of tape. To achieve this relatively low tape speed—a standard speed used in some recording—a magnetic head assembly which rotates at a high speed is used, giving an effective tape speed sufficient to record and reproduce the full 4-megacycle band width. Thus, while the tape moves slowly, the heads move across the surface of the tape at a very high speed. The head assembly actually consists of four heads placed on a rotating drum. One head is always in contact with the surface of the tape. As one head leaves the tape, the next head makes contact. The magnetic pattern is recorded transversely across the tape instead of longitudinally as in conventional audio recorders.

The sound that accompanies the picture is recorded in the ordinary manner along one edge of the magnetic tape.

As has been stated above, with the Ampex equipment video programs can be recorded directly from the television camera, TV receiver, from TV transmission lines or microwave. In utilizing the same equipment to record a motion picture production, the action would be picked up by a closed-circuit TV camera instead of a film camera and the

(Continued on Page 384)



TOP VIEW of the Ampex Videotape recorder, showing the 14-inch reels and the 2-inch wide magnetic tape which accommodate a full hour's program of pictures and sound. Despite the number of controls shown here, recordings are made by pushing only one button. Same unit is used for playback as well as recording. Cost is around $45,000.



VARIETY was given the chase sequences by filming some of the action with a fixed camera instead of in a follow shot with the camera mobile-mounted. Here the pursuing locomotive thunders through a mountain pass as the action is recorded in CinemaScope and color with a Mitchell camera mounted on a parallel erected alongside the tracks.

Filming "The Great Locomotive Chase"

Cinematographer Charles Boyle's skillful use of camera gives dramatic impact to chase scenes in latest Disney live-action feature.

By ARTHUR ROWAN

As THE THRILLING scenes of Walt Disney's "The Great Locomotive Chase" unfold on the screen, few will realize what tremendous planning and preparation was necessary in order to photograph them. These are chase scenes that are different from the usual scenes of the pursuing and the pursued filmed in Hollywood, where every possible kind of equipment necessary for this type of photography is at the cameraman's immediate command.

The chase scenes for this picture were filmed 1500 miles away, in the mountains of Georgia, and as is usually the case when a film company goes on location, exigencies arose that invariably found the company in need of a vital piece of production equipment or forced to change its shooting schedule.

That's what happened to the Walt Disney company on location at Clayton, Georgia, where director of photography Charles Boyle, A.S.C. and his camera crew undertook one of the most challenging photographic assignments in filmdom



MITCHELL CINEMASCOPE camera was mounted on locomotive, just beyond the cab, for an "engineer's-eye view" of scene ahead as train pulls into small wayside station where it is stolen by Yankees.



CAMERA CAR fitted with flanged wheels rolls along track behind locomotive while camera crew on tender shoots important action. Here camera car supplies power for sound and camera.



CAMERA CAR is used here for photography. Coupled to box car, dramatic action is filmed with aid of booster light supplied by reflectors in hands of grips.



FRAMEWORK and platform was erected on one side of ancient locomotive for shooting closeups of drive wheels being reversed, which was the only means of braking the veteran "balloon-stacker."

history. Because there were little or no paved roads paralleling the railroad over which much of the action was to be filmed, the camera car brought along for shooting from the highway was converted with flanged wheels so it could travel on the tracks. Some of the picture's most thrilling scenes were filmed from the camera travelling before or behind the train as it sped along the ancient rail line that extends from Atlanta to Chattanooga.

From a critical chapter in the nation's history Walt Disney selected a page unparalleled in daring and excitement as the basis for his most thrilling live-action feature, "The Great Locomotive Chase."

This is the story of the Andrews Raid, an incredible plot to break the back of the Civil War—a spy story of suspense, of high speed, of inconceivable bravery, of complete selflessness on the part of not only a score of dedicated men who faced the armies of the Confederacy to attempt their mission, but of their Southern captors, too.

The Raiders' weapons were pieces of railroad rolling stock, not guns; their goal, the saving of untold lives, not the taking of any. Their reward was the most cherished. the most distinctive the country could then or now bestow: the Congressional Medal of Honor.

The Raiders' scheme was never so complex as Disney's job of restaging it, compounded as the latter was by the passage of nearly a century. Walt had to find ancient rolling stock that could still be operated, turn up a railroad untouched by time, move to the scene and re-run the locomotive race for the cameras.

(Continued on Page 370)



CHECKING RATE OF travel of leader through dry box is Bob Gray, who designed and built the equipment, while engineer W. Walla handles the controls. Infra-red lamps provide heat for drying film, while fan on top provides air circulation. (All photos by author.)

Bob Bailey's Homemade 16mm Film Processor

By BOB GRAY

IF SAVING MONEY had been his only aim, Bob Bailey probably never would have built his own 16mm film processor. The Houston, Texas, photographer knew that, in the long run, it would no doubt cost him as much as any standard commercial model. But he wanted more "control" over development of reversal film. He wanted to be able to actually develop it "by inspection." He wanted, in short, a machine that could not be obtained on the market.

So he built one. And today in the rear of his downtown Houston photo studio can be seen (and heard) one of the country's truly unique film laboratory creations.

It is, as Bailey says, "a fantastic conglomeration of pulleys, weights, fan belts, windshield wipers, light bulbs, home-made gears, and baby diapers." It sprawls through three small rooms, the film passing through tiny slits in the walls. It looks, for all the world, like something Rube Goldberg whipped up in one of his more lighthearted moments. And more than one person has laughed on first viewing Bob Bailey's film processing machine.

Bailey, however, has only good-natured tolerance for those who find the appearance of his brainchild amusing. In the first place, few people ever see it. None of his competitors have. He doesn't look upon it as a machine which requires artistic symmetry. And the machine works so well it makes no difference what it looks like. It makes money for Bailey.

How Bailey built it is the story of a man determined to put his own ideas into practice. He began thinking about it in 1950, after 20 years of building up a solid still photo business. Bailey decided his new plant should offer motion picture processing to the amateur and to the television film market along the Gulf Coast. So he began checking catalogues for equipment. What he saw was fine, but he hesitated. And not because of prices.

"I guess maybe I wanted more in a processor than I could fairly expect." Bailey recalls now. "I figured that I ought to be able to develop reversal film by inspection in a darkroom. And I wanted some sort of protection against film or leader breaks."

So Bailey made his decision. Although he had never before seen a 16-mm processing machine he set out to build one.

First, Bailey sketched out some rough plans. Then, with a skilled mechanic to help and advise him, Bailey spent the next five months building his machine from the ground up.

It meant buying and shaping expensive stainless steel sheets into tanks; experimenting with plastics to get precise thicknesses into moving parts. It meant perfecting dozens of separate parts and combinations of parts without any model or plan to go by.

Since Bailey did not have any concern about moving his finished processor from one spot to another, compactness was almost unnecessary. Hence, the machine was built right in three back rooms of his plant.

This has proved a blessing in numerous ways. Bailey figured that by stretching out the machine's components it would give the lab man almost continual visual contact with the film as it was being processed. Film breaks would thus prove less of a hazard.

In the first and smallest of the rooms Bailey installed tanks for first developer and bleach. Here, also, the film is loaded for processing. Appropriate safelights make it possible to develop reversal film by inspection when necessary. By installing two spindles Bailey is able to continually add more film without stopping the machine.

The film passes through a light-proof slit in the wall to the second room where it goes through cleaning bath, second developer, hypo, and washes.

The second room contains also the one-half horsepower motor which drives the film transport system.

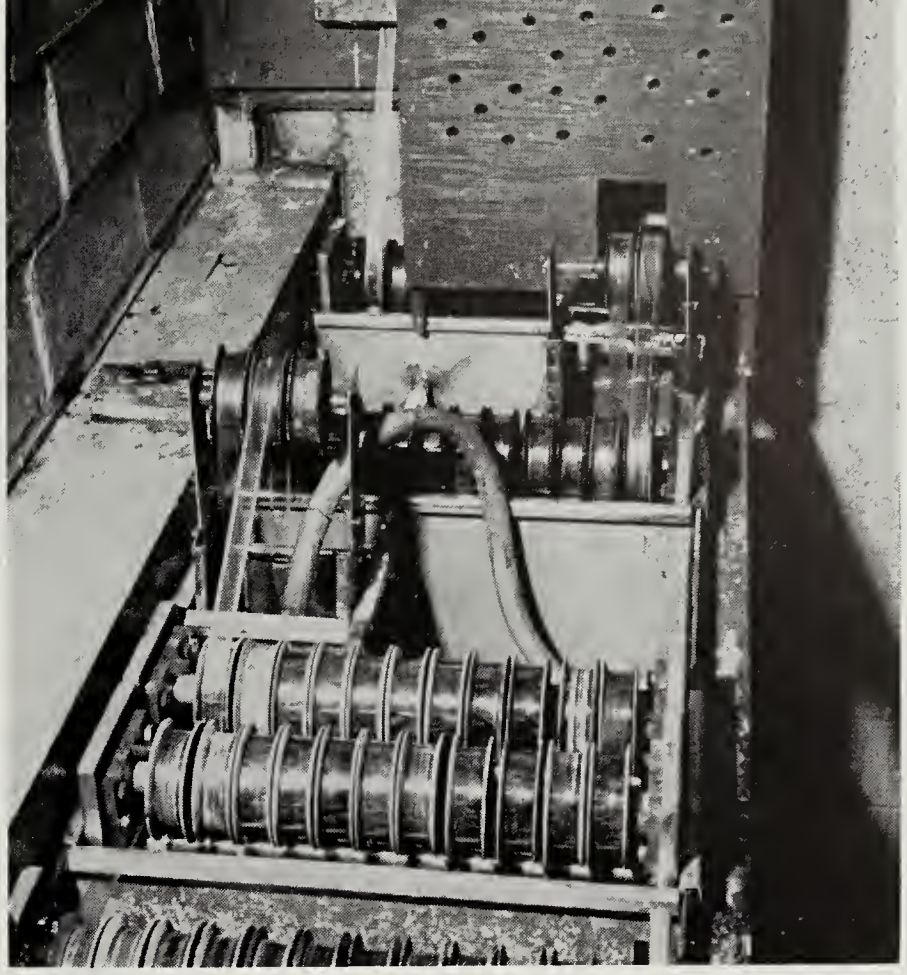
A 1950 Ford speedometer shows the film's progress in miles per hour, rather than feet per second. Here also may be seen the spectacular side of Bailey's creation. Leaving the final wash, the wet film takes off toward the ceiling, around pulleys. It moves overhead to a vertical frame resembling a miniature guillotine. Up and down in this frame the film slides, providing the slack so desperately needed when, on occasion, a piece of film parts company or the leader jumps the track.

The film rises and descends once more to pass through a second wall and into room number three for entry into Bailey's king-sized dryer. This great wooden cabinet is roomy and uncomplicated. It contains clusters of 150-watt infra-red heat lamps to dry the film. A one-time household floor fan on top circulates the warm air.

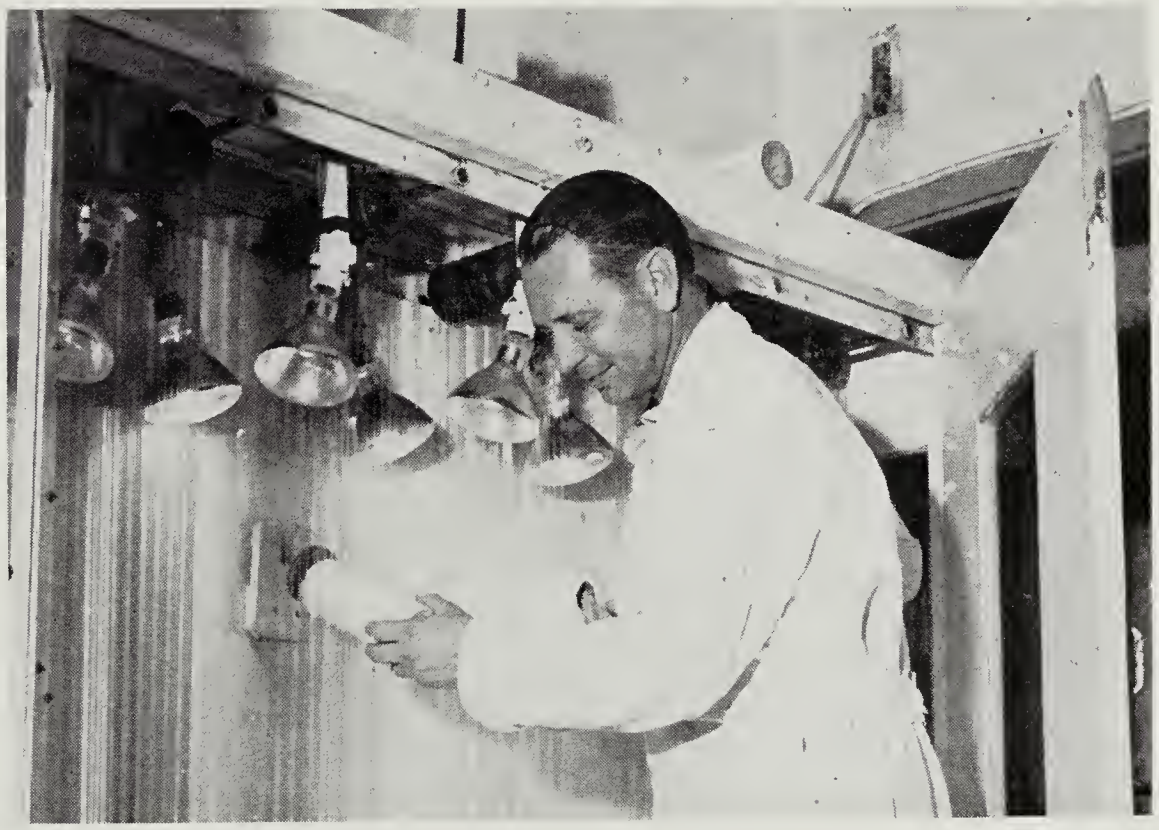
Although reversal film is usually dry by the time it reaches the second line of rollers, there are six such lines to permit drying even the most stubborn print stock.

Bailey discovered early that film shrinks as it dries, and therefore should move at a different speed in the dryer than it does in the processing tanks. He solved this problem with a simply-designed variable-speed pulley, connected by an auto fan belt.

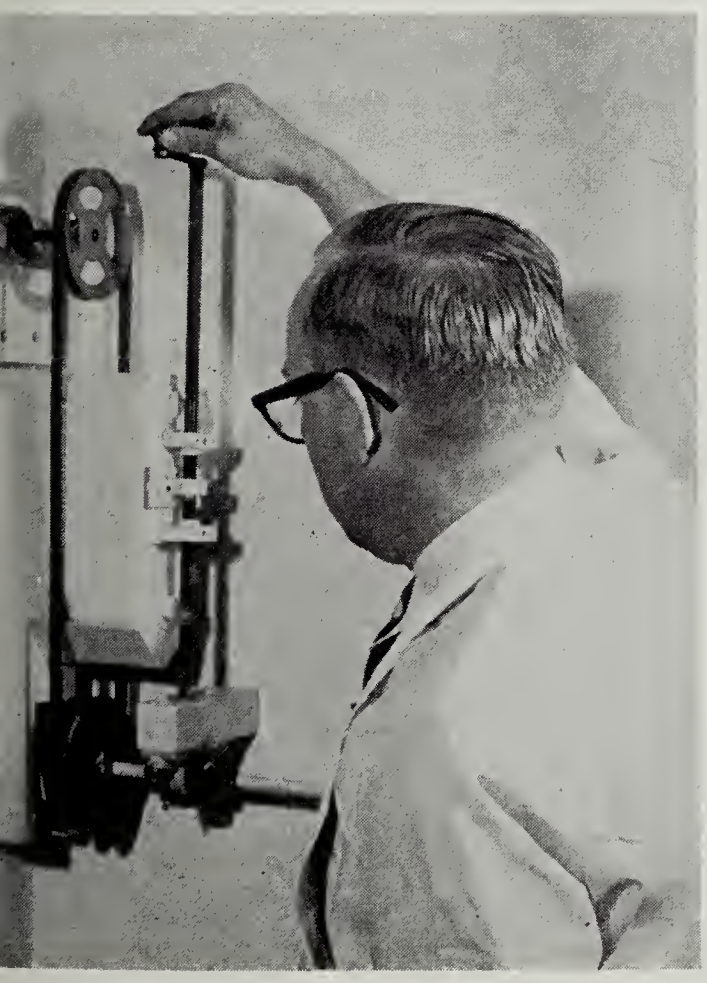
Once in the dryer, the film comes



VIEW OF TANKS in 2nd room. Film emerges through slit in wall at left of perforated box, which contains the re-exposure lamp.



LARGE ROLLERS wrapped with layers of sponge rubber, then covered with baby diapers, absorb remaining water droplets from surface of film as it passes through drying cabinet.



BAILEY'S ingenious gadget which enables him to vary the rate of film travel, which is slower in the dry box than in the processing tanks due to contraction of film.

into contact with another Bailey "original"—ordinary baby diapers wrapped around foam rubber rolls. Just the thing for removing lingering drops of water from tender emulsions!

Emerging from his machine, the film encounters one more thoughtful detail added in the name of convenience and control. There are two take-up spools which can turn simultaneously, speeding up the momentary business of switching from full to new reel. But all these little conveniences and aides did not result from Bailey's original plan. Some have been added each year. In fact, hardly a month goes by but what Bailey or someone in his shop does not come up with a new "gimmick" to try out on the machine.

Bailey knew, for example, how much more controlled overdevelopment of newsreel film he could get by using oversize tanks of developer. He can quickly switch now from 10 to 20 gallon tanks if he desires, and by lengthening the amount of tank space, can put in additional tanks for either prehardner or more developer.

So, even if Bailey had any thought of trying to patent or sell duplicates of his processor (which he does not) it would be next to impossible.

"How could I sell something I modi-

(Continued on Page 382)



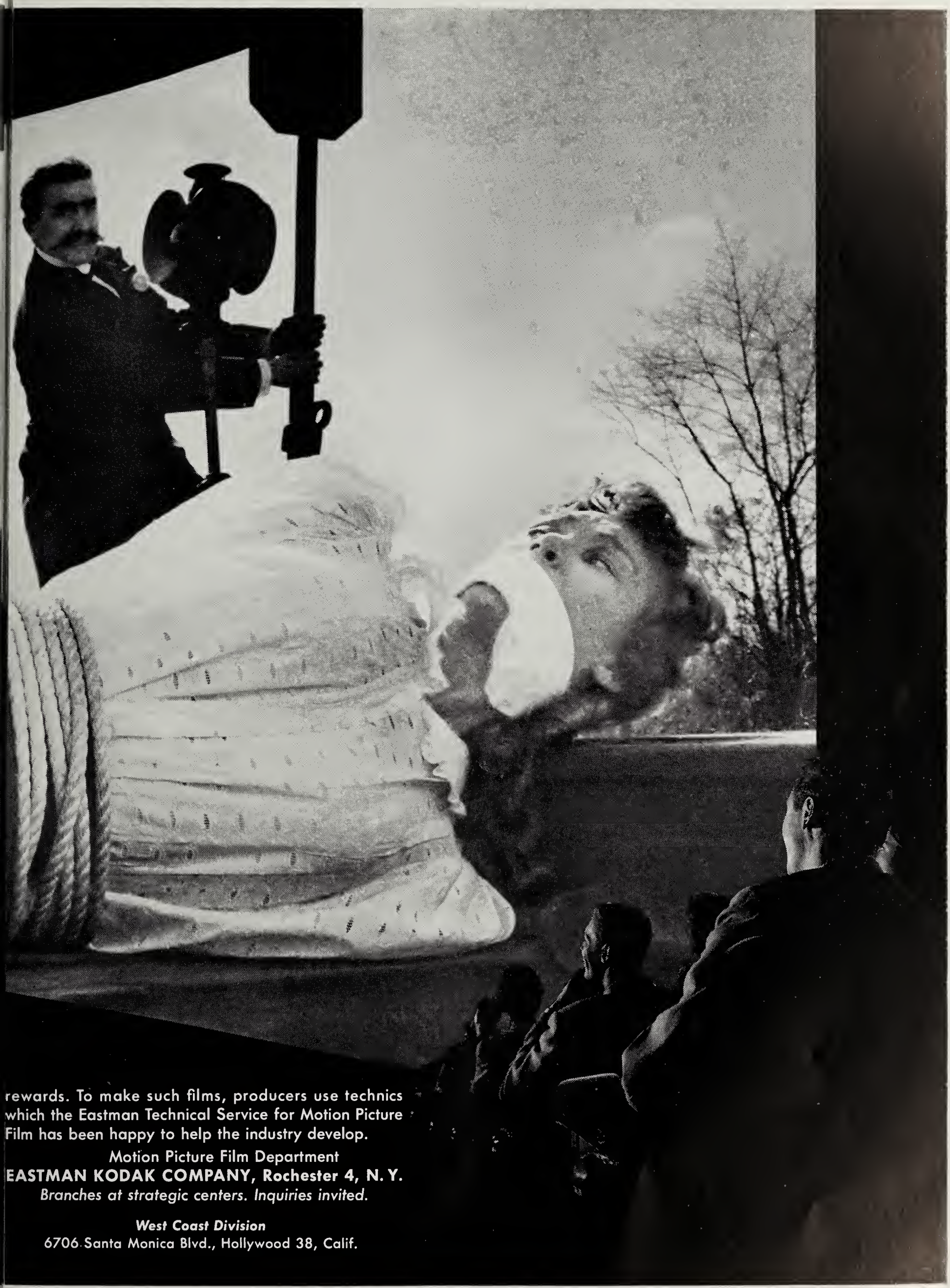
The villain still pursues her!

Nothing beats the old-time "meller-dramer" for sheer excitement—unless it's a modern thriller done for today's wide-screen. Black-and-white or color, it captures its audiences, young and old, brings them back for more—show after show.

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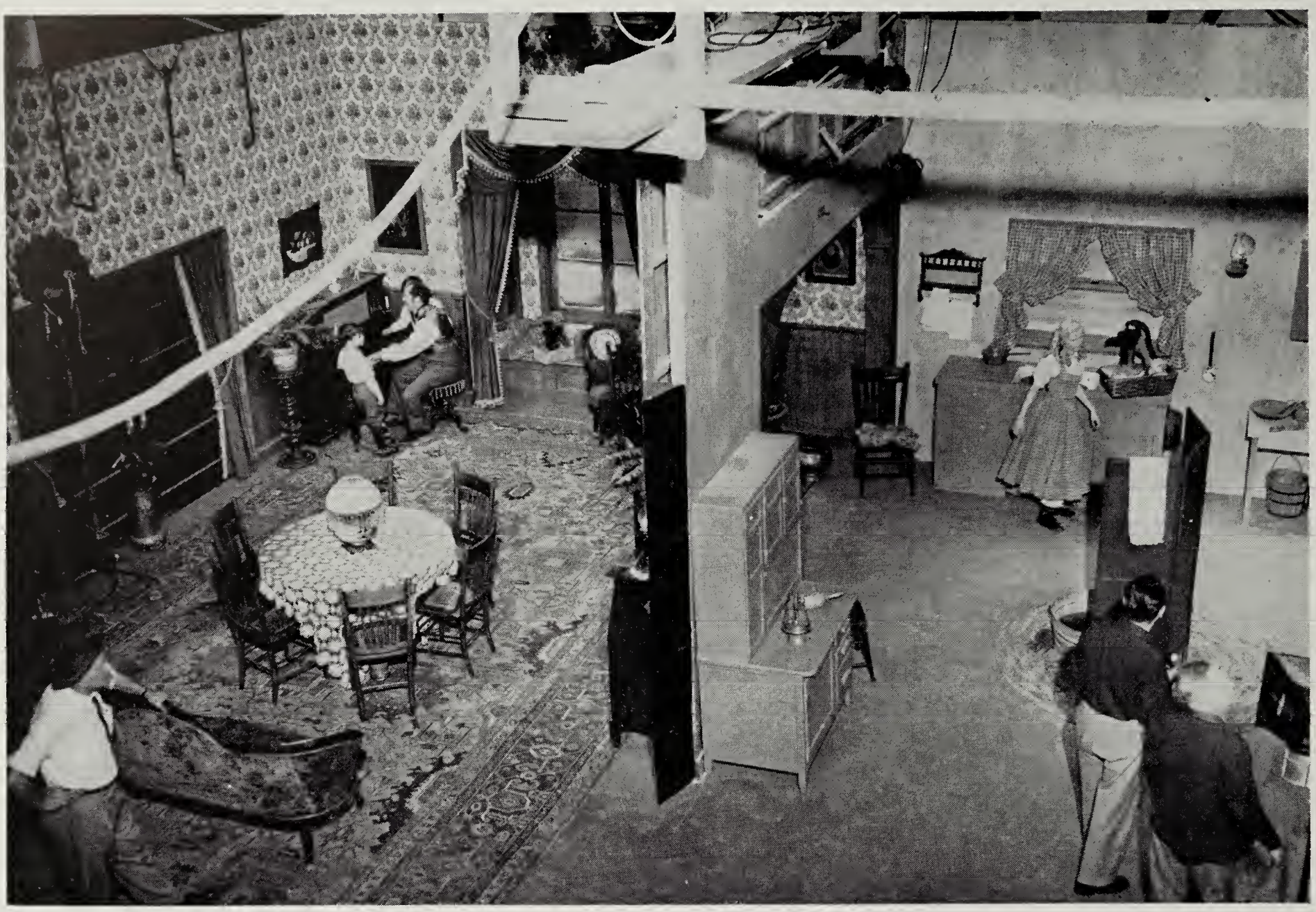
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rewards. To make such films, producers use technics which the Eastman Technical Service for Motion Picture Film has been happy to help the industry develop.

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A STUDY OF set construction in a typical small industrial film studio. Here conventional flats have been used to form a two-room set. Note catwalk for lights immediately above center wall, also the lamp hangers (minus lamps) suspended from top of wall.

Small Studio Set Construction

How to build and use "flats" for erection of interior sets.

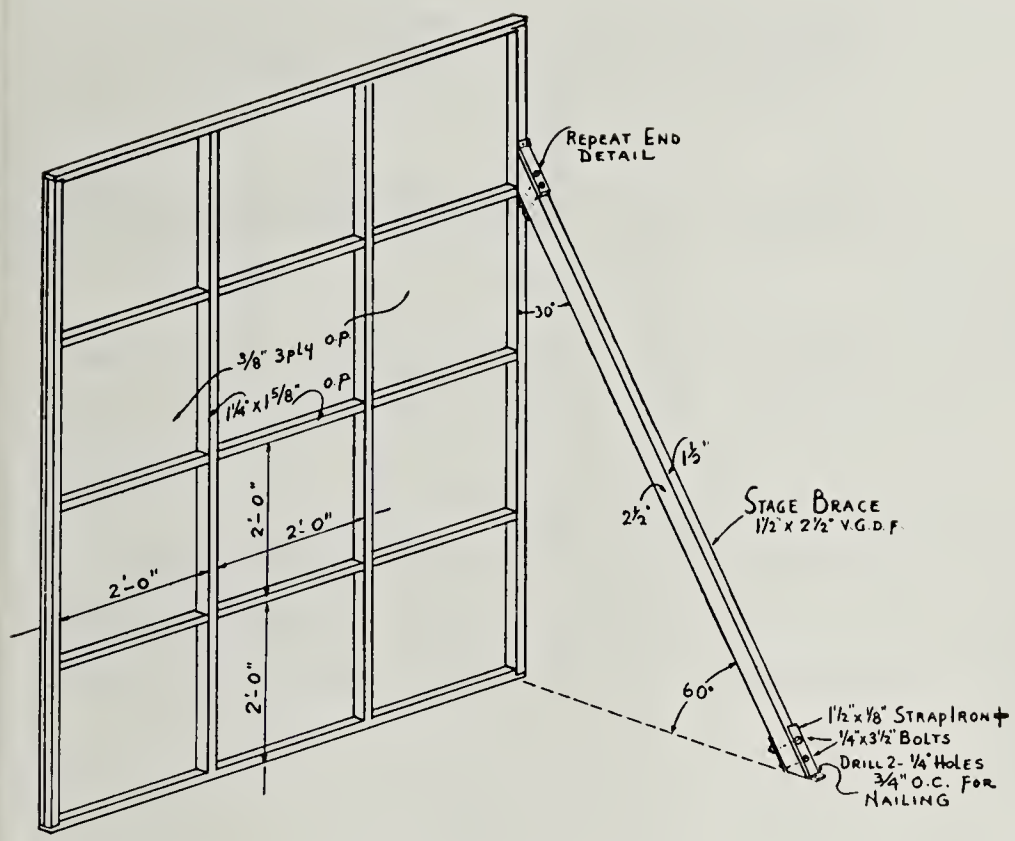
By RALPH LAWTON

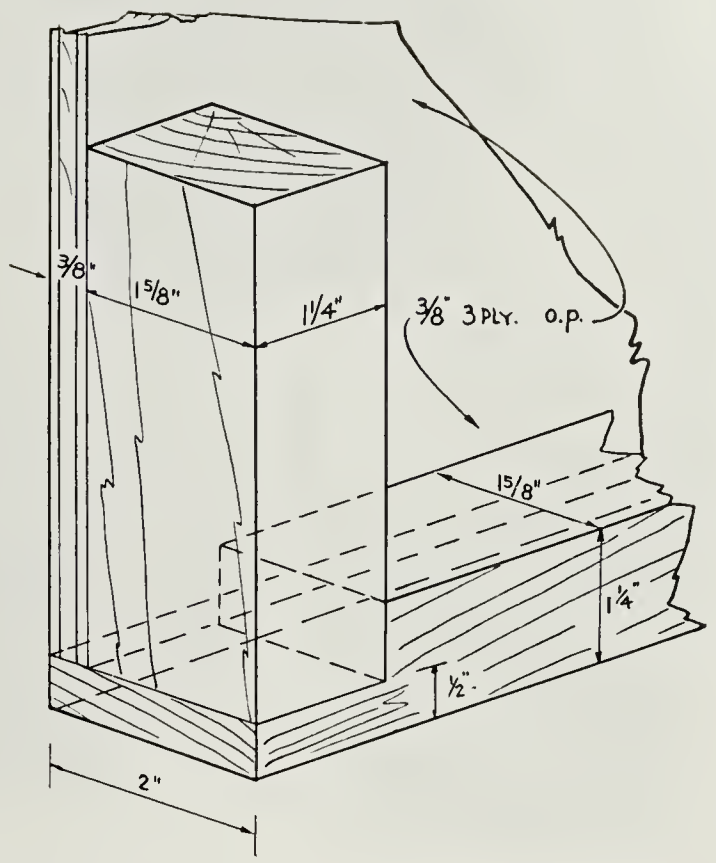
AS THE FILM MAKER moves into the field of professional motion picture production, it follows that his entire operation gradually assumes the standards of the professional. Instead of shooting the complete picture on actual location sites, the use of specially constructed sets becomes a vital factor in the economic as well as the qualitative phases of production.

For almost any type of planned film production, the use of sets is far more advantageous than practical interiors; they make possible improved quality in the photography because of the greater latitude which sets afford in lighting. When sets are used you will be able to light players and props more effectively; get more effective camera angles; and you'll find you can build your set specifically to suit the needs of action and composition, rather than having to adapt them to the limitations of an existing room.

The construction of sets isn't nearly as difficult as it first seems. It isn't particularly expensive, either, if you follow professional practice. This means building sets from standard units, or "flats," which can be arranged and re-arranged, reassembled and decorated to fit a wide range of needs.

The professional flat is a standardized wall panel made of plywood or wallboard laid over a lightweight wooden frame, usually "room high"—about eight or ten feet in height. Used in conjunction with equally standard panels having a door, window of other orifice, they can be assembled easily to represent, from the camera's point-of-view,





DETAILS FOR constructing a conventional flat are shown in the two diagrams above. At left dimensions are given for putting together the framework of a 6x8 foot flat, also details for making the angle braces necessary for holding flats in place in vertical position. Corner detail is shown in diagram at right. Flats are covered with plywood or composition wallboard.

a room of almost any size or shape desired. Once assembled, the flats may be painted or papered, and mouldings, cornices, baseboards, etc., applied to complete the architectural details desired. The flats can readily be dis-assembled after the set is no longer needed, stored, and re-used time and again.

The basic structural part of the flat is a framework constructed of 1-by-3s. (In the accompanying diagram, these are shown as 1¼" x 1⅝"; however, the 1" x 3" material makes for easier assembling and nailing.—ED.) Where the flat or panel is to be 4 feet in width—the size of standard plywood and wallboard panels—a second 1" x 3" member is placed in the middle and cross-members spaced and nailed at intervals of 24-inches, as shown in the diagram.

Two materials are generally used for the flat surface: composition wallboard or ¼-inch plywood. The wallboard is cheaper and lighter; the plywood costlier but more durable and has the added advantage of permitting removal of any wallpaper applied to it without damaging the surface of the flat. Whichever material is used, it should be given a coat of shellac after the flat is completed.

Most simple sets are constructed in an "L" shape and therefore stand readily without a great deal of bracing. However, some bracing is advisable to give the flats rigidity and prevent any vibration that would show up on the screen. The standard brace is a six-foot length of 2" x 2" lumber with the ends cut at an angle and finished with a piece of strap iron, properly bent, and having holes drilled to facilitate nailing of the brace to the frame of the flat and to the stage floor. (See diagram.)

Where doors or windows are required in a set, two methods may be followed: (1) you can obtain real door and window frames from your local lumber mill, or (2) obtain second-hand units from a house wrecking company. These may be mounted within a flat, or they may be placed in position between two standard flats and, in the case of a window, the top and bottom filled in with small flat sections made for the purpose.

Where the set calls for showing only a single wall of a room, set up enough flats to give the desired wall width, nailing the frames together without driving the nails in completely. Always leave the nail head above surface so that it may be readily removed with a hammer.

Prop the flats in upright position and anchor them in place, using the angle braces described above. For this, use

(Continued on Page 383)



SIMPLE flats backdrop an item of industrial machinery which is subject of 35mm black-and-white business film. Flats, when constructed in minimum sizes, are easily transported to factory or other sites and set up to provide a pleasing background for equipment or a manufacturing operation which is the subject of the camera.



Importance Of Viewing Glass In Cinematography

When the cameraman looks at a scene through a viewing glass, the brightness reaching the eye is reduced sufficiently so he can judge general appearance of scene and the lighting contrasts as they will appear on film.

By LEIGH ALLEN

NOT ALL DIRECTORS of photography in the Hollywood studios use a viewing glass and most of those who do not, eschew it not because it is valuless but rather because they have developed the "practiced eye" which enables them instinctively to size up color or tonal contrasts at a glance.

But a viewing glass can be real helpful at times for the seasoned veteran as well as the up-and-coming professional cinematographer. By using the glass, he can be *sure*. Just as when using an exposure meter instead of guessing at exposures.

When we look at the shadows in a scene, our eye automatically adapts itself to the existing light and we see detail that the film may not see. The viewing glass lowers the brightness of the scene so that the eye will see it approximately as the film will record it.

The advent of the viewing glass antedates that of the photo-electric exposure meter, and goes back to the days of "color-blind" orthochromatic film. As the first photographic films were relatively insensitive to all colors but blue, in

(Continued on Page 374)



KARL STRUSS, A.S.C., uses viewing glass to check contrasts and lighting on set of recent production.



MILTON KRASNER, A.S.C., using lamp and viewing glass, studies effect of special makeup on cinema star Marilyn Monroe.

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TYPICAL is this small studio production crew shooting a scene for "A Place To Live," produced by Dynamic Films, New York. Directing the photography is author Ray Long (top left) who also supervises set lighting and acts as camera operator.

Cinematography In Small Studio Production

The cameraman's versatility and resourcefulness play a big part in commercial and industrial film production.

By RAY E. LONG

IT'S A FAIR GUESS that few categories of motion picture production demand more of the individual craftsman than does that of the commercial and industrial film.

The extent to which small studio production can be varied within a short period of time, and the unfathomable degree to which a cinematographer's ingenuity can be put to test in the process, is vividly exemplified in a busy filming program recently brought to fruition at one of the more prominent commercial film studios in the New York area known as Dynamic Films, Inc. Here is a production cue worthy of note because it literally defies not only the typical opposition of a crowded shooting schedule, but also low-budgeting.

Indeed, the old saying "variety is the spice of life" speaks exceptionally well for the small studio situation in general. A cinematographer who works in industrial and non-theatrical film production (he is called a First Commercial Cameraman on the East Coast) invariably goes about adjusting himself to periodic production variations as a matter of course. Probably the most common of the fluctuations affecting him are (a) challenging contrasts in subject matter from one assignment to the next, (b) recurrent use of different makes and sizes of motion picture cameras for various production formats, and (c) equivalent modification in film widths and emulsions. The sky's the limit right down

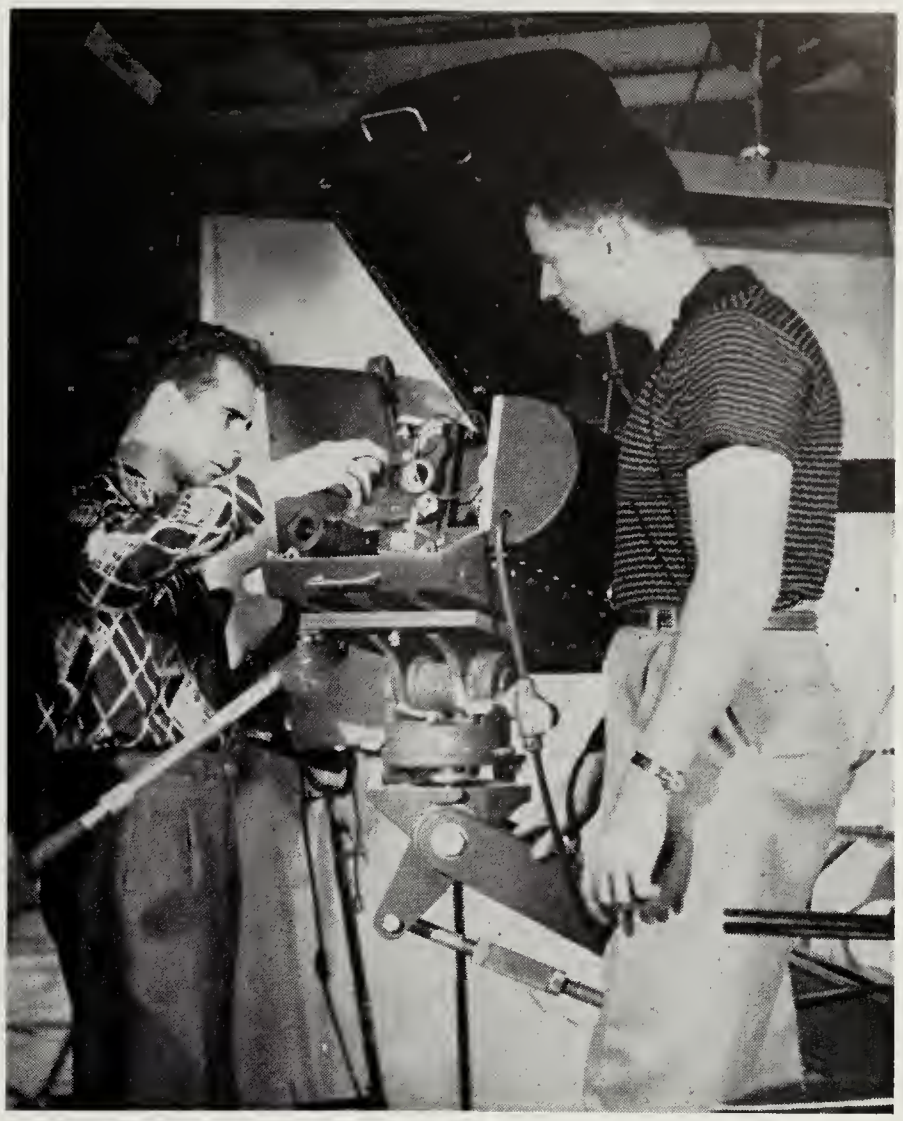
the line. How well a cameraman can conduct and artistically express himself in the face of such challenges is sufficient test for any individual.

Appropriately enough, Dynamic Films' distinctive slogan, "Creative Thinking On Film," takes the cameraman into its fold as a fully-pledged individual from the very start. His personal opinion relative to matters of production, and often direction, invariably carries enough weight within the organization to be respected on practically the same level as that of the producer himself. This, in turn, endows the working atmosphere with a feeling of mutality which is inducive, in effect shall we say, to "bringing home the bacon" on schedule, at the same time complementing the producer's own standard of operation.

Commendable, too, is the fact that only a mere handful of craftsmen supervise as well as execute such filming programs. Heading the production crew are the directors, the first cameraman, and four or five men who represent the various other motion picture crafts. The first cameraman not only supervises the lighting of all of his set-ups, but he also acts as his own camera operator, regardless of whether the production is in 16mm or 35mm.

First on the crowded agenda in a recent sixty-day production schedule at Dynamic Films was the filming of some TV commercials in 35mm black-and-white for one of the nation's top watch distributors. The camera used was a Mitchell NC blimped for sessions of live sound. Out of a total of three days allowed for this assignment, two days went for the filming of sequences with well-known narrators, with a third devoted to the silent but nerve-wracking business of photographing wrist watches at extremely close range. These over-sized closeups were handled very effectively by staging and lighting the product in a special indirect-light box equipped with adjustable reflective surfaces. To complement this, the basic light source was sufficiently heavy on wattage to maintain average exposures without drastically forsaking depth in the focus of the large image.

As most cameramen know, few focusing chores are more intricate or provoking than those entailing long focal length lenses mounted on special extension tubes for super-magnification. Indeed, few such commercial assignments will try



THE ASSISTANT cameraman's chores are no less significant to production in the small studio. Here first cameraman Ray Long looks on while his assistant checks aperture of the Mitchell NC camera prior to re-loading.



AN INTRICATE staging and lighting set-up for photographing diamond rings in ultra closeup—typical of the unusual photographic problems encountered by the industrial studio cinematographer.

a cinematographer's patience more, or spare his nerves less, than when they are linked with a client's premeditated conception of how his product should look through the lens. (This was a strong production point later on in the filming of other TV commercials involving extraordinary detail in the tiny settings of diamond rings.) But one thing is certain. A business client must be satisfied. And happily, in both of these instances, he was.

Next in line was a technical training film for the U. S. Navy on the subject of "Visual Mine Watching." This was also filmed by the regular crew with a Mitchell, with the shooting schedule carefully planned to fit into a space of five days (a normal industry work week in the New York area). All but one day was devoted to studio work with actors filling the needs of the script and the Navy itself supplying the necessary technical advisors. The challenge was twofold. Primarily, filming had to proceed rapidly in order to meet a low-budgeted deadline, but it also had to be handled with extreme care to technical detail. So, too, was it with the lighting, tempered in low-key to artistically compliment the dramatic mood of the subject. A fifth day of filming, blessed by good weather on location, brought the Navy production to conclusion and the score for the crew to: "two subjects down and thirteen to go."

The film on war preparedness was hardly in the can before the studio handed the cameraman an assignment on the subject of religion. This coincidental contrast in subject matter also brought a shift in the technical aspects of

(Continued on Page 376)



YOUR AUDIENCE sees your players fresh, with no preconceived ideas of their personality or behavior. It is up to you as the film maker to make them intriguing from the opening shot.

Bring Your Characters To Life

Unless your audience is gripped by your characters, the most ingenious of plots will not be sufficient to maintain their interest.

By HAROLD BENSON

THE SAME problems of characterization in film fiction confront amateur and professional alike. Both tend to fall back to dialogue as a kind of short cut. A and B discuss C before he enters. By the time he appears the audience has already been given the main leads to his personality.

But this is the way of the playwright. The cinema offers its own methods of immediate characterization, and the scope is practically limitless. The amateur who is still exploring the fertile field of the silent film-play has many opportunities to establish his cast as promptly as the professional. This is one of the numerous cases where the budget bears no relation to the effectiveness of the treatment.

As you script your next movie, stop for a moment to consider the way in which you judge the strangers you meet for the first time. What influenced your opinion? Why do feel well or ill-disposed towards a man you've only known for five minutes? And when and why do you often have to revise your original judgment?

Analyze your answers, and you'll see how you can translate these everyday experiences into cinematic terms. For the short film, first impressions are of the utmost importance. In reality we may have to wait for months or even years before a person's true character is revealed; but in the cinema, the disclosure can be made as soon as he appears.

Four words contain the clue to immediate characterization: setting, dress, props and action. Each of these influence us in normal life to varying degrees. On film their total impact can be made overwhelming.

Settings are all too often regarded as mere backcloths to the action. The different atmospheres of park, pool-room and restaurant are ignored, and the result is a series of meaningless locations which add nothing to the characters or to the film.

Yet we all know that our reaction to the girl we find alone in a night-club is hardly the same as our attitude to the girl we meet in a swimming pool. The man who bumps into us on his way out of a museum makes a different impression to the stranger who is hanging about the stage door of a theatre.

Profession, education, background and even income can be suggested by the location in which we first show our main characters. Before they move or speak, the situations in which the audience discovers them provides a pointer to their position or personality.

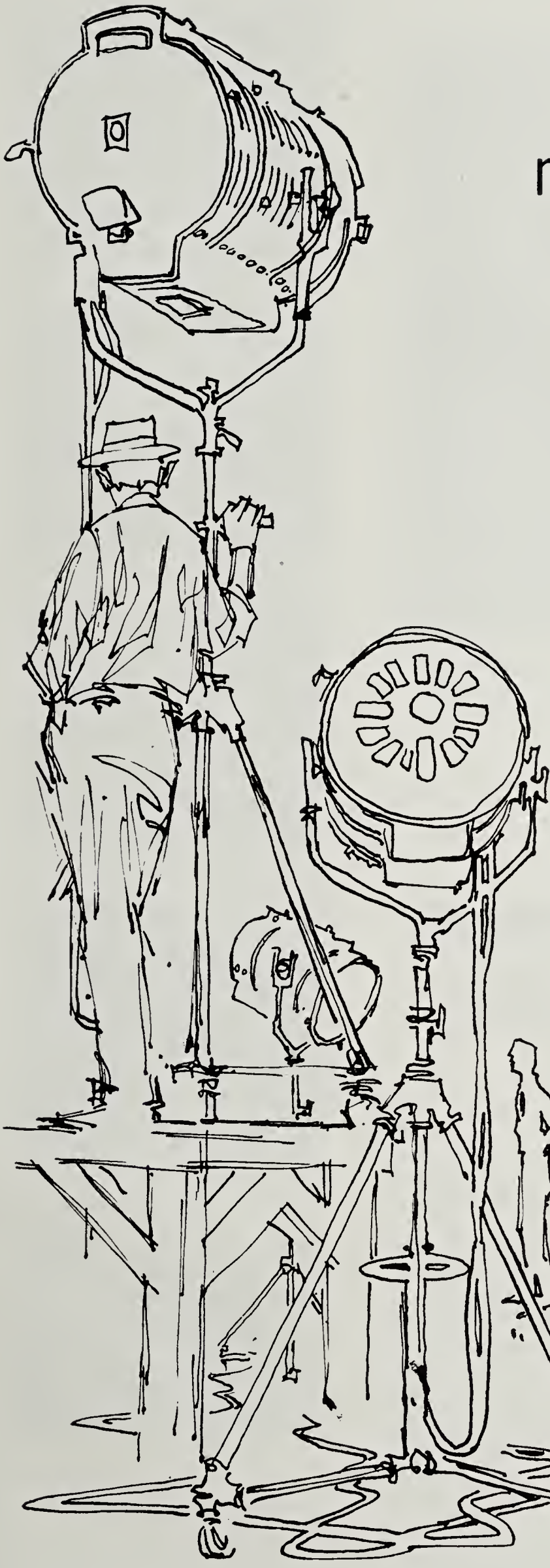
Dress, of course, is an invaluable character revelation for the film maker. In life more people give a false impression of themselves by their appearance than in any other way. On the screen. clothes must almost always be an infallible reflection of their true selves.

But beware of exaggeration. The Bohemian dress of the artist, the roughness of the poor and smoothness of the rich can tempt us into excess in imitation. Remember the value of the close-up, and concentrate on telling-details. A frayed cuff or a down-at-heel shoe can

(Continued on Page 379)



SETTINGS, dress and props together answer the "when, where and how" of characterization.



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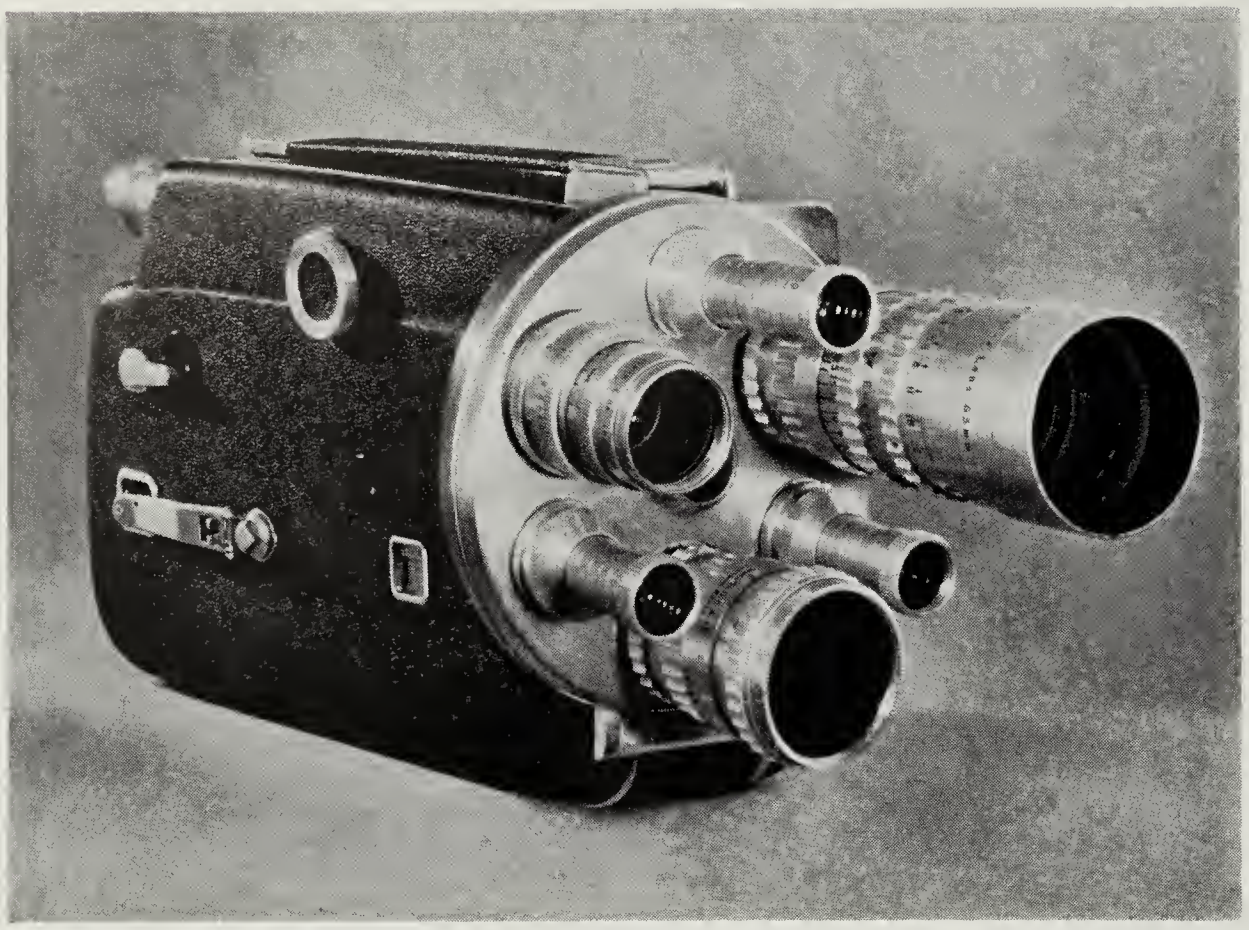
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NEW TURRENT MODEL of the Cine-Kodak K-100 16mm camera combines versatility of expensive professional cameras with unusual ease of operation, may be had with f/1.9 or f/1.4 Ektars.

Kodak Offers Improved Cameras, Films And Projectors For 1956

By JOHN FORBES

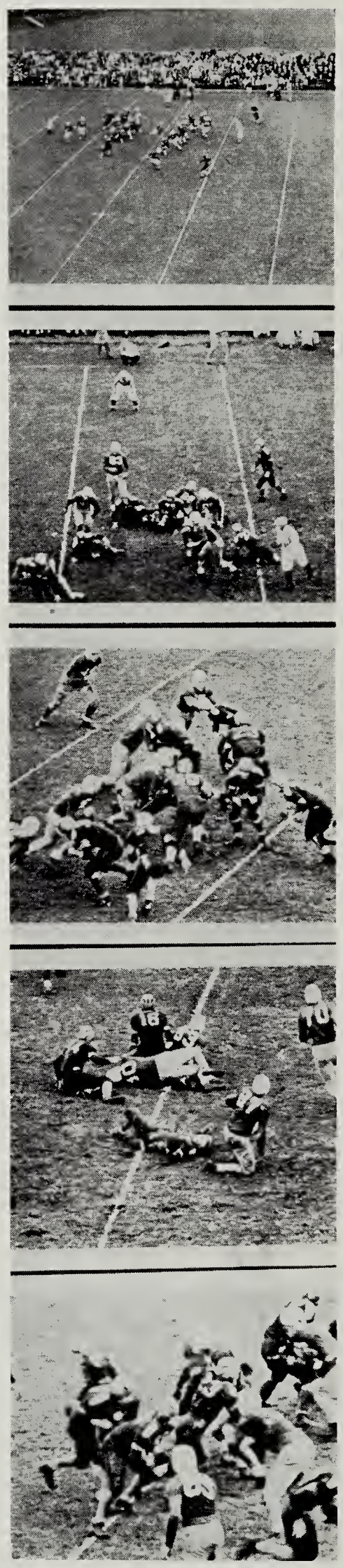
FOR A WHILE it seemed that the manufacturers of photographic equipment were neglecting the movie amateur, and that the fascinating hobby of amateur movie making was fast losing its appeal. Little, if anything, was being done to stimulate the hobbyist's interest nor to attract new recruits to the realm of ciné filming.

Now, almost suddenly, there is a reawakening. So many new cameras and related equipment are making their appearance that it seems like old times—like the days in the early thirties when Univex started the snowball rolling on popular, low-cost movie making with a simple 8mm camera that sold for $9.95. It became possible for every family to make and show its own movies.

Today, both Eastman Kodak Company and the Bell & Howell Company, leaders in the manufacture of ciné apparatus, are stirring the amateur movie maker's interest anew with announcements about smart new equipment.

Bell & Howell Company has made a notable contribution with its Model 200-EE 16mm camera that automatically adjusts the lens iris to the prevailing light, insuring correct exposure on all takes. The camera was described in detail in last month's issue.

In recent weeks, Eastman Kodak Company has made announcements about new cine cameras, projectors, films and accessories of interest to seasoned and novice movie makers alike. There is a smart new camera for the



ABOVE SERIES of pictures indicates the pictorial range of the new Cine-Kodak K-100 Turret Model camera. Pictures are actual enlargements from a 16mm film of the same subject photographed from the same camera position using five different Cine-Kodak lenses. Top to bottom they are: 25mm, 40mm, 63mm, 102mm, and 152mm.

advanced 16mm movie maker and a slick little job for the beginner that gets him started making movies for the modest outlay of only $29.95. The complete equipment for shooting and showing home movies is included in a kit priced at $99.50.

One of the company's more interesting announcements is that regarding a turret model of the new Cine-Kodak K-100 roll film (16mm) camera. The new model combines the movie making versatility of more expensive professional equipment at moderate cost with ease of operation. The camera mounts three of Kodak's famed Ektar lenses together with matching viewfinder lenses, allowing instant changing from standard to wide-angle to telephoto shots. Ektar lenses, with appropriate viewfinders, are available in a 15mm to 152mm range. The finder shows adjacent areas, as well as the field of coverage, making it easy for the camera's user to follow action.

When any one of the lenses is swung into shooting position, the appropriate viewfinder lens automatically moves into place. The turret is in an offset position so that a wide range of lenses can be used without physical or optical interference.

The K-100 Turret Camera permits a wide range of movie effects. For example, the photographer shooting such colorful events as a yacht race can change quickly from a panoramic view of an entire fleet to an intimate closeup of a single craft and its crew. This versatility also applies to scenic shots in a travel movie, and numerous other objects.

The camera features a pre-stressed power spring motor that exposes 40 feet of film at a single winding, a shutter release at the rear of the camera, and a large, accurate speed control governor. It has a speed range of 16 to 64 frames per second, provides for uniform single-frame exposures, and uses either single-perforated film for sound recording or standard double-perforated film.

The camera can be loaded with 50- or 100-foot rolls of all regular Kodak 16mm movie films. In addition to its visual film-footage indicator, it features a dial to show at any time exactly how many feet of film can be run without rewinding.

Operation at any speed is exact, with gate pressure adjusted automatically to capture sharp images on chatter-free film. An auxiliary hand crank allows the photographer to backwind to produce fades and dissolves, multiple exposures, and other special effects, or to change exposures when lighting conditions are not too favorable. The camera can also be run by an auxiliary electric motor drive shaft.

For the 8mm movie maker, Eastman Kodak has slicked up its line of Brownie cameras. Headlined is a f/2.7 lens model with a $29.95 price tag. This budget-priced camera is the same f/2.7 model that has made sales history since its introduction in 1951—but it wears a smart new case and boasts a Sky-Guide and lens data on the name plate as added features. In the Brownie movie camera line-up, it replaces the f/2.7 model which has been priced at $37.50.

A camera new to the Brownie movie line-up has an f/2.3 lens. It is furnished with Kodadur side panels, incorporates the new Sky-Guide front, and has an optical tri-field viewfinder which shows the area covered by wide-angle and telephoto converters available for the camera, as well as that of the standard lens. The rear finder element provides parallax correction in six positions ranging from infinity to three feet.

A fast f/1.9 lens is the distinguishing element of the third camera of the new line-up, which is otherwise a twin of the f/2.3 model. All three of these cameras have a 13mm fixed-focus lens and operate with box camera simplicity. The only setting to be made is that of the lens opening, in accordance with the amount of light on the subject. Otherwise, it's simply a matter of loading, winding, and shooting.

Topping the new 8mm line-up in versatility, yet retaining the characteristic simplicity of operation, is the Brownie Movie Camera, Turret f/1.9 introduced last fall.

It enables the amateur movie maker to shoot his scenes with a standard lens, reach out for a wide-angle view, or pinpoint it telephoto fashion — without focusing or resetting for exposure. The movie maker switches from one view to the other simply by pulling out the turret, and rotating it until the desired barrel is in front of the lens.

A new Brownie Movie Projector, featuring the extra brilliance provided by a 500-watt lamp and a built-in lens element which gives needle-sharp projection over the entire screen area, was introduced last month.

Bright, clear projection over a 4-foot screen width is possible with this new projector whose design includes an on-off switch. It is a more versatile version of Kodak's popular 300-watt Brownie Movie Projector. It has an f/1.6 "big screen" focusing lens and accepts a 200-foot film reel for 15 minutes of uninterrupted projection.

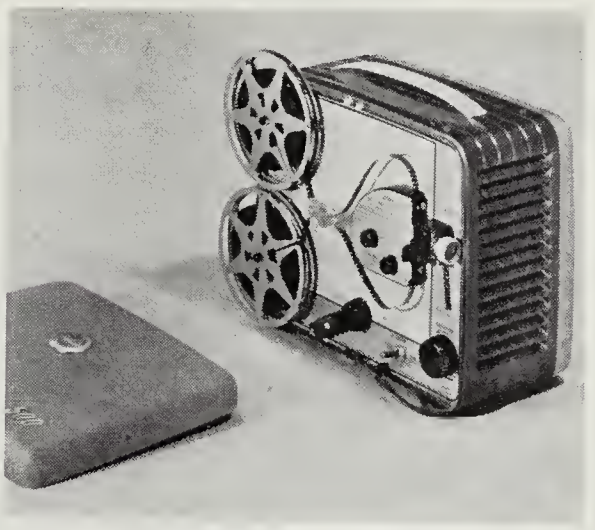
A series of new Kodak Filter Kits which contain the basic needs for the amateur photographer who wants to get started in filter photography has been announced by the Eastman Kodak Company.

Kits will be supplied complete with filters in a rugged, compact case which has individual crystal-clear, swing-out

(Continued on Page 372)



STAR OF Eastman Kodak's new Brownie Movie Camera line-up is this f/2.7 lens model with a $29.95 price tag, Sky Guide for exposures and lens data on the name plate.



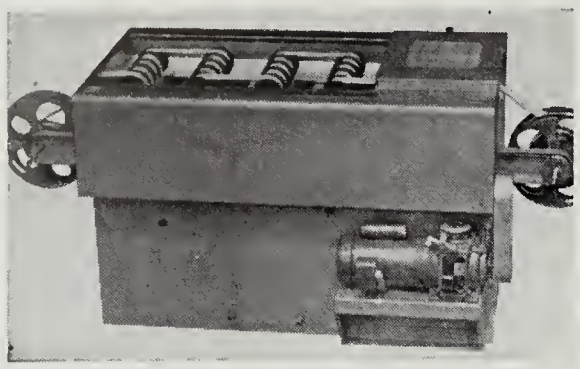
THE NEW Brownie 8mm projector has a 500-watt lamp that provides ample brilliance for bright pictures on a 4-foot screen.



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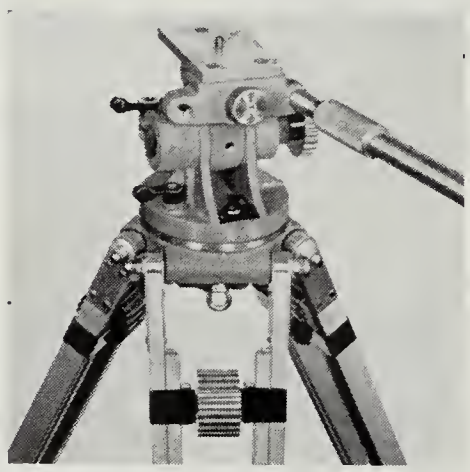
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FILMING "THE GREAT LOCOMOTIVE CHASE"

(Continued from Page 355)

The tortuous 87-mile stretch covered by the chase between Big Shanty (now Kennesaw), Georgia and Ringgold, where the "General's" steam gave out for want of fuel, is today part of the Nashville, Chattanooga & St. Louis Railway's high-speed steel straightaway. This doesn't resemble in the least the winding route that Andrews and Fuller fought over.

But Disney got as close to the actual scene as modern railroading will permit. He scouted out the antiquated Tallulah Falls Railroad, winding its unchanged way through the mountains barely 50 miles to the east of the actual scene, and brought his antique photoplay engines and cars to it.

The genuine locomotive principals were not available for action. The "General" stands in the Union station at Chattanooga. The "Texas" is on view in the basement of Atlanta's Civil War Cyclorama. Neither is functional.

So their roles were filled by almost exact operating duplicates. The Baltimore and Ohio Railroad's 100-year-old "William Mason," named after the father of the American type engine that ruled the rails for nearly half a century, portrays the "General." The "Inyo," veteran of the gun-toting silver days between the mint and the Comstock Lode, appears as the "Texas."

The B. & O. furnished the "Mason," and Paramount Pictures the "Inyo," both widely used in motion pictures and centennials.

Disney brought considerable other equipage with him. It included period coaches and freight cars, and a replica of a tiny locomotive, all borrowed from the B. & O., first railroad to be chartered in this country. In Burbank the studio built five period type boxcars for the destruction awaiting them before the cameras, bought and remodeled a sixth for a crash scene, and rented a variety of ancient car trucks, switches and other paraphernalia necessary for reconstructing a vintage railroad.

Early in September, while advance crews worked up and down 35 miles of the Tallulah Falls Railway building sets to represent stations, a tunnel, and other important points in the real chase, two modern trains set out carrying Disney's railroad, one from Baltimore and the other, three thousand miles distant, from Los Angeles. Eventually they converged at Cornelia, Ga., foot of the T.F.R.R., and moved up into Clayton, location headquarters, for six weeks of field production.

With 160 members of cast and crew on hand, flown to Georgia in Hollywood's biggest location airlift, the cameras began rolling on Monday, September 26, with Walt Disney on hand.

Director of photography Boyle brought along something more than the usual implements of cinematography—a wide experience in "chase" techniques, acquired during his long association with Universal Pictures, and an extensive knowledge of color photography which he gained during his many years' with Technicolor as one of that company's top cameramen. These attributes show strongly in his photography of "The Great Locomotive Chase."

There is for example, a directness in the manner in which the locomotive chase scenes have been filmed, and this adds immensely to the believability of the story. Despite the limitations imposed by the distant location, Boyle has achieved great variety in his camera angles in these scenes. This entailed rigging the camera on the ancient locomotives in a wide variety of positions; erecting a framework extending from one side of the locomotive for shooting a closeup of the spinning driver-wheels, and utilizing the camera car with its flanged wheels, as previously mentioned.

A long and unexpected siege of rain made it imperative that the company utilize every moment of good daylight, once the storm abated. It followed that many scenes were photographed without consideration for the position of the sun. To compensate for this, Boyle utilized sunlight reflectors for fill light and this has been done so expertly that their use is not apparent.

"Where the situation made a steady reflector impossible," says Boyle, "I'd dispense with them altogether rather than chance sloppy lighting being cast into a scene."

Perhaps the trickiest problem of all those encountered was fitting the wide-screen format to the narrow interior of the box cars in which much pertinent action was staged. Here the right camera angle and skillful lighting proved the answer. In order to get the required lights overhead for these interiors, the top of one box car was removed, and a framewor erected above it and covered with a black tarpaulin.

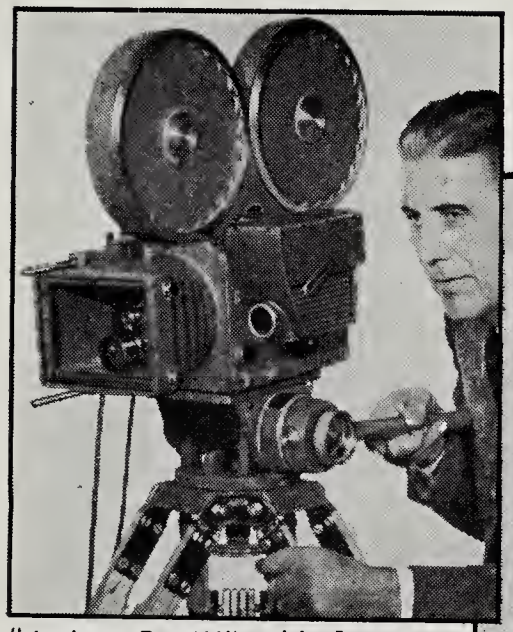
The lighting of the box car interiors is skillfully keyed to both the mood of the story and fidelity. The general lighting is in low key with the accent light suggesting that coming through cracks in the box car walls, doors, etc.

Although we have been concerned here only with the photography of the chase scenes, needless to say the rest of the picture displays the same expert lighting and camera treatment. There is

(Continued on Page 372)

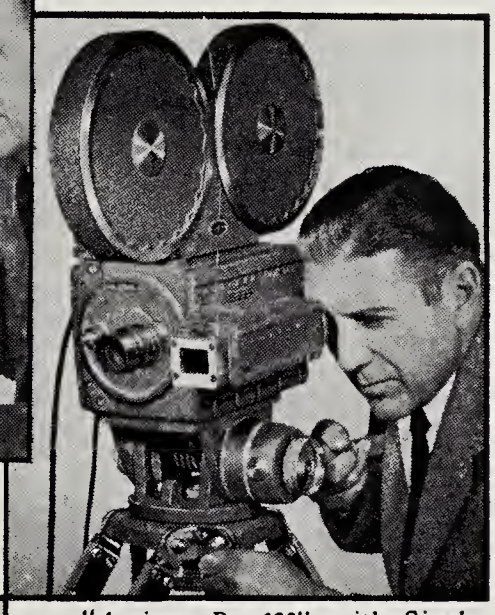
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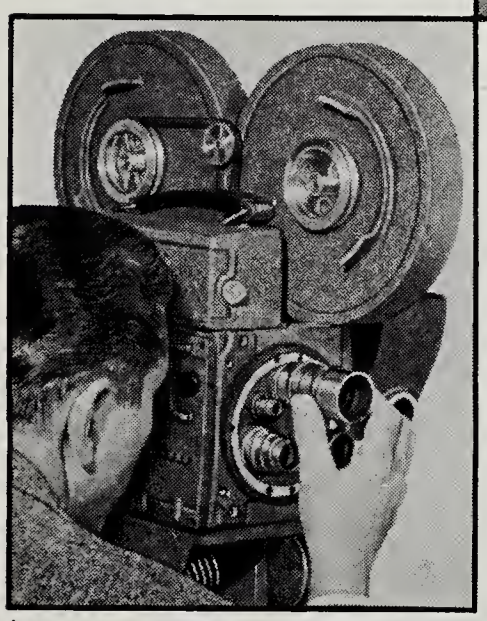


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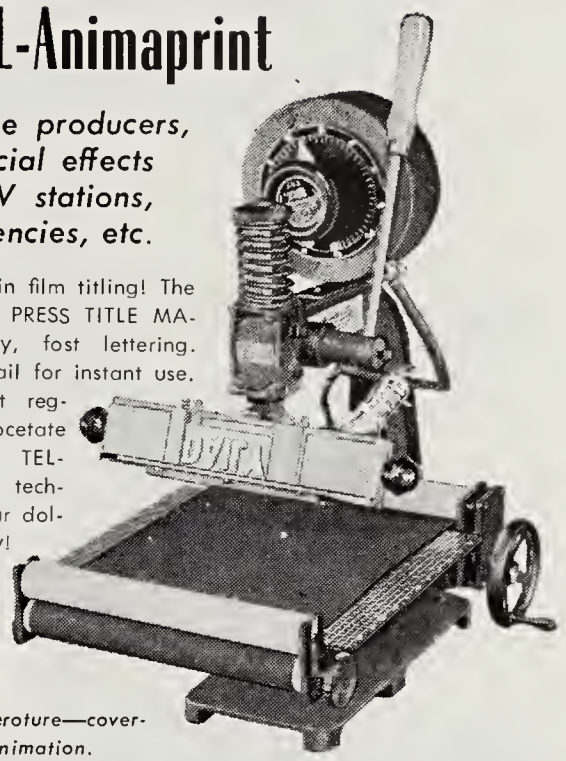
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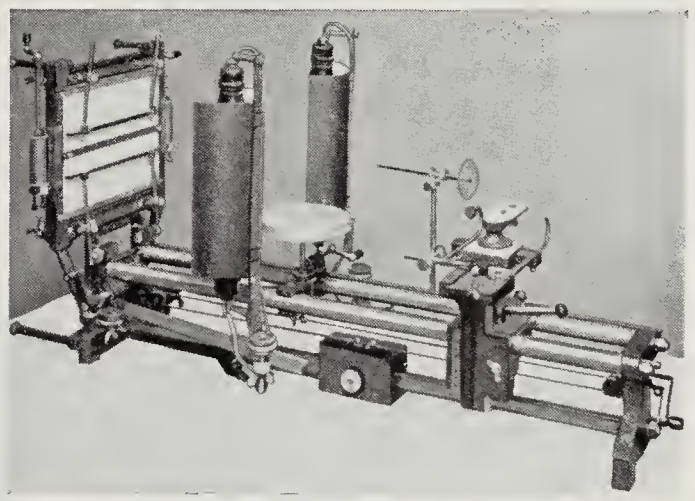
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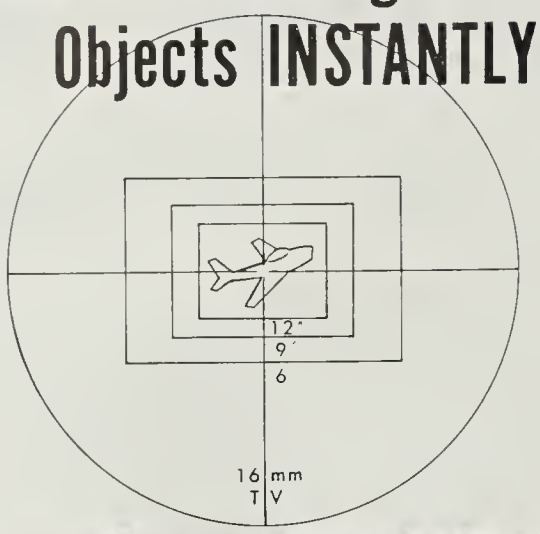
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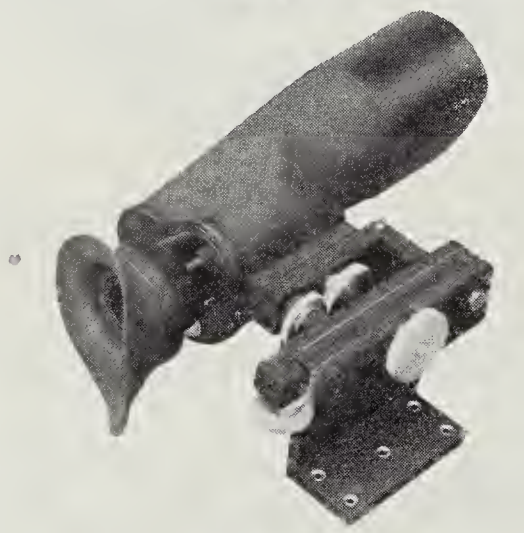
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FILMING "THE GREAT LOCOMOTIVE CHASE"

(Continued from Page 370)

one standout scene, however, that deserves special mention.

It was not the company's intention to shoot interiors on location, but when it started to rain and it appeared there would be no letup in the storm for days, plans were changed and a number of sets were erected there. One represented the dining room of a trackside inn, with wide windows looking out on the rail yard. The camera is focused on the train crew eating lunch here; at the same time the train which Andrews and his raiders are about to steal under their noses, can be seen in the distance through the windows. It is important that the train and the raiders be seen clearly from this camera vantage point, and in order to achieve this, it was necessary for Boyle to have the windows treated with a special light-filtering coating, thus balancing the lights of the outdoor scene with that of the interior.

The cameras which Boyle brought along for this assignment were three Mitchell BNCs and two Arriflex 35s—all fitted with CinemaScope lenses. The picture was photographed in Eastman Color negative and was processed by Technicolor laboratories.

When asked about the problem of color temperature, Boyle answered: "With Technicolor doing the lab work, nominal color temperature variation is no problem, as the Technicolor lab corrects for any discrepancies during the processing and printing."

KODAK CAMERAS, FILMS, PROJECTORS FOR 1956

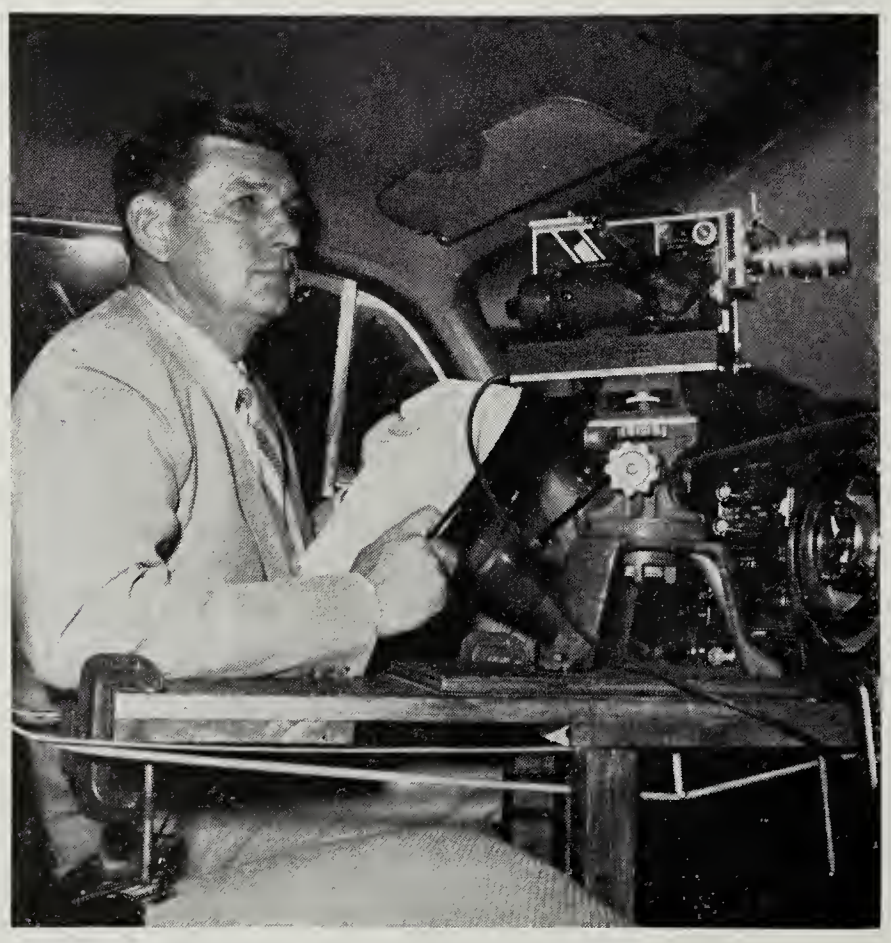
(Continued from Page 369)

compartments each holding an individual filter or where required, an adapter ring.

Each filter is thus easily identified, held, and protected in a separate compartment, which may be swung out for easy filter removal or insertion. The filter is held by a detent while a safety-snap enclosure keeps the individual compartment closed when it is not in use.

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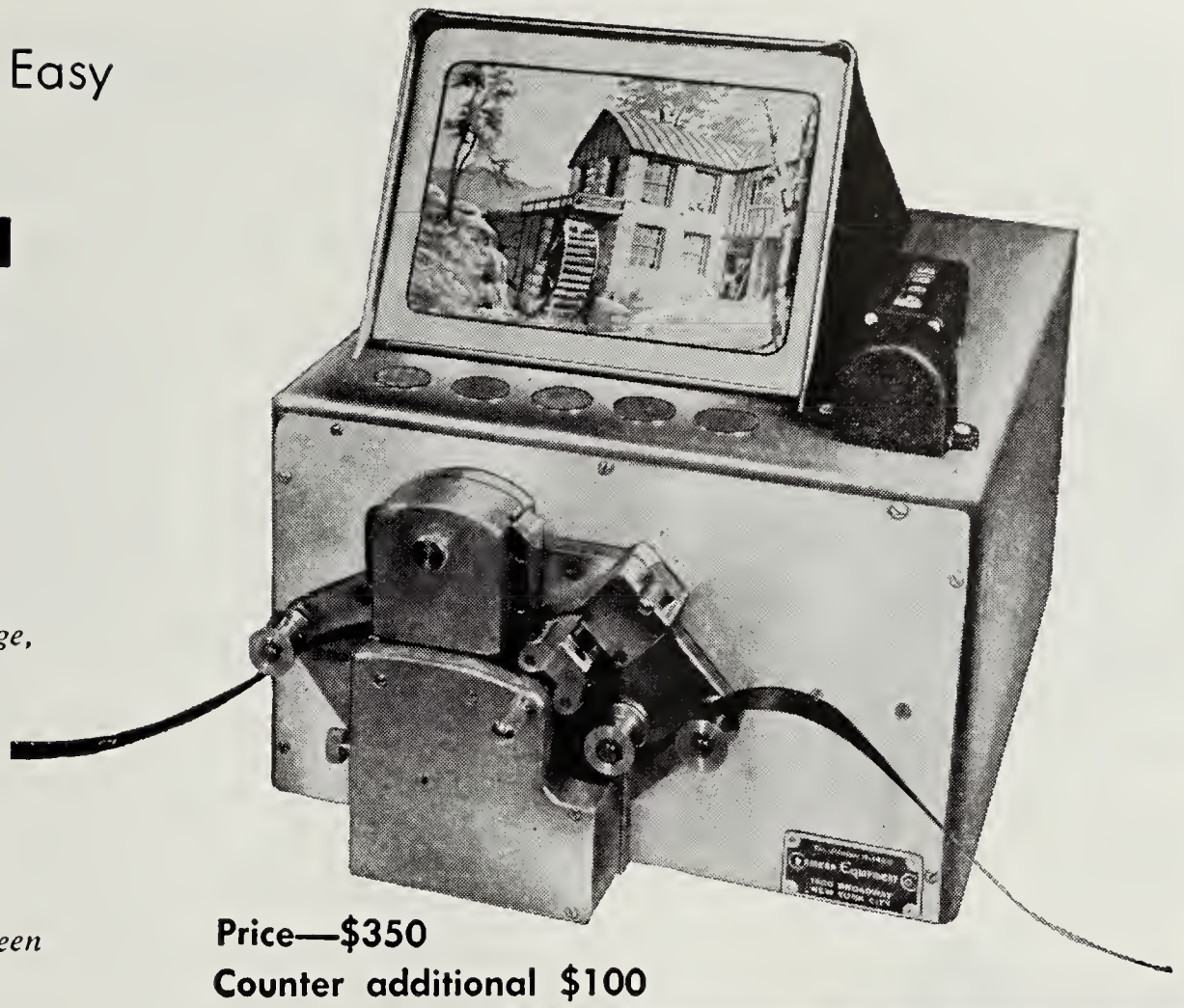


SPECIAL camera mount for on-the-road filming of driving problems for unique movie driving quiz, entitled "What's Your Driver Eye-Q?" produced by Aetna Casualty & Surety Co. Behind camera is Cecil G. Zaun, supervisor of safety, Los Angeles City Schools, who supervised the production.

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added as desired to empty compartments in the case.

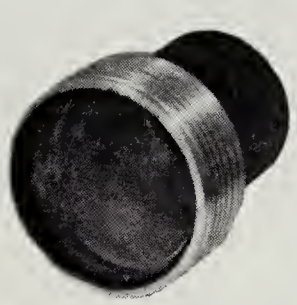
Movie camera kits are available for the following cameras: Brownie Movie Camera f/2.7, Brownie Movie Camera Model 2, f/2.3, and f/2.7, and Cine-Kodak Medallion 8 Camera; for the Brownie Movie Camera and the Brownie Movie Camera Model 2, f/1.9, and for other cameras taking Series 4 and 5 Filters.

Kodak's cine films have also come in for overhauling and modernization to meet today's requirements for faster emulsions and better pictorial renditon. A new, improved, Cine-Kodak Plus-X Reversal Film, offering 16mm camera users extremely fine grain black-and-white movies of exceptional sharpness, will be placed on sale this month. This film will be sold without processing charge included in the price.

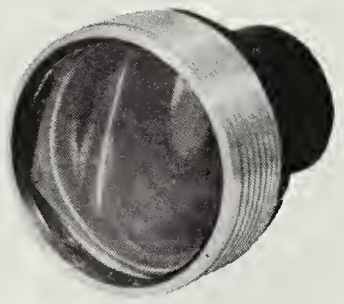
In addition to permitting projection on larger screens without loss of detail and sharpness, the new film is one-third of a stop faster when used with tungsten illumination than the Plus-X it replaced. It has a daylight exposure index of 50; a tungsten index of 40. The cost remains the same.

In introducing this film, Kodak also announced the discontinuation of Cine-Kodak Super-X and Super-XX 16mm Reversal Films and all 8mm Cine-

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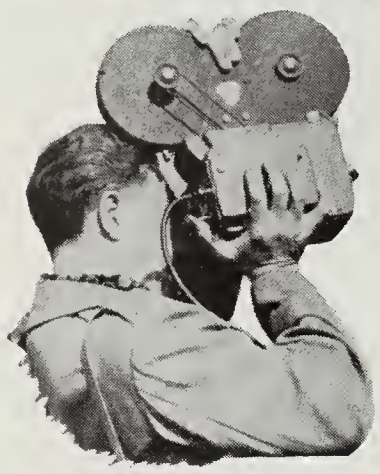
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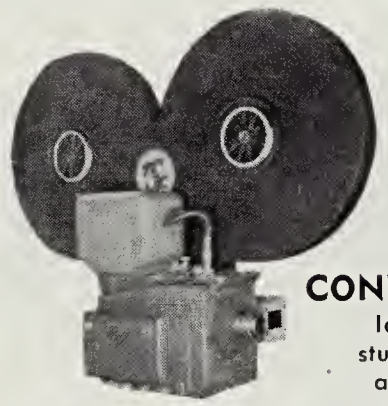
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Kodak black-and-white films as soon as existing stocks are exhausted.

The 16mm films are being dropped because the new Plus-X and the company's previously announced high-speed Tri-X Reversal Film will provide substantially improved results. The 8mm black-and-white films are being discontinued because in the important applications of black-and-white movie film—industrial, commercial, sports, news, television, etc.—the 16mm size is preferable.

All processing of Kodak black-and-white movie film will be handled through dealers who will forward their customers' exposed film to a processing laboratory. Kodak will maintain a processing facility in Rochester, but only for the purpose of providing emergency service to dealers unable to make satisfactory arrangements with other laboratories. It is expected that the use of local laboratories will permit faster processing and delivery.

Both the Cine-Kodak Plus-X and Tri-X Reversal Films are packaged for 16mm spool-type cameras, and are available in 16mm magazines on special order. **END**

IMPORTANCE OF VIEWING GLASS

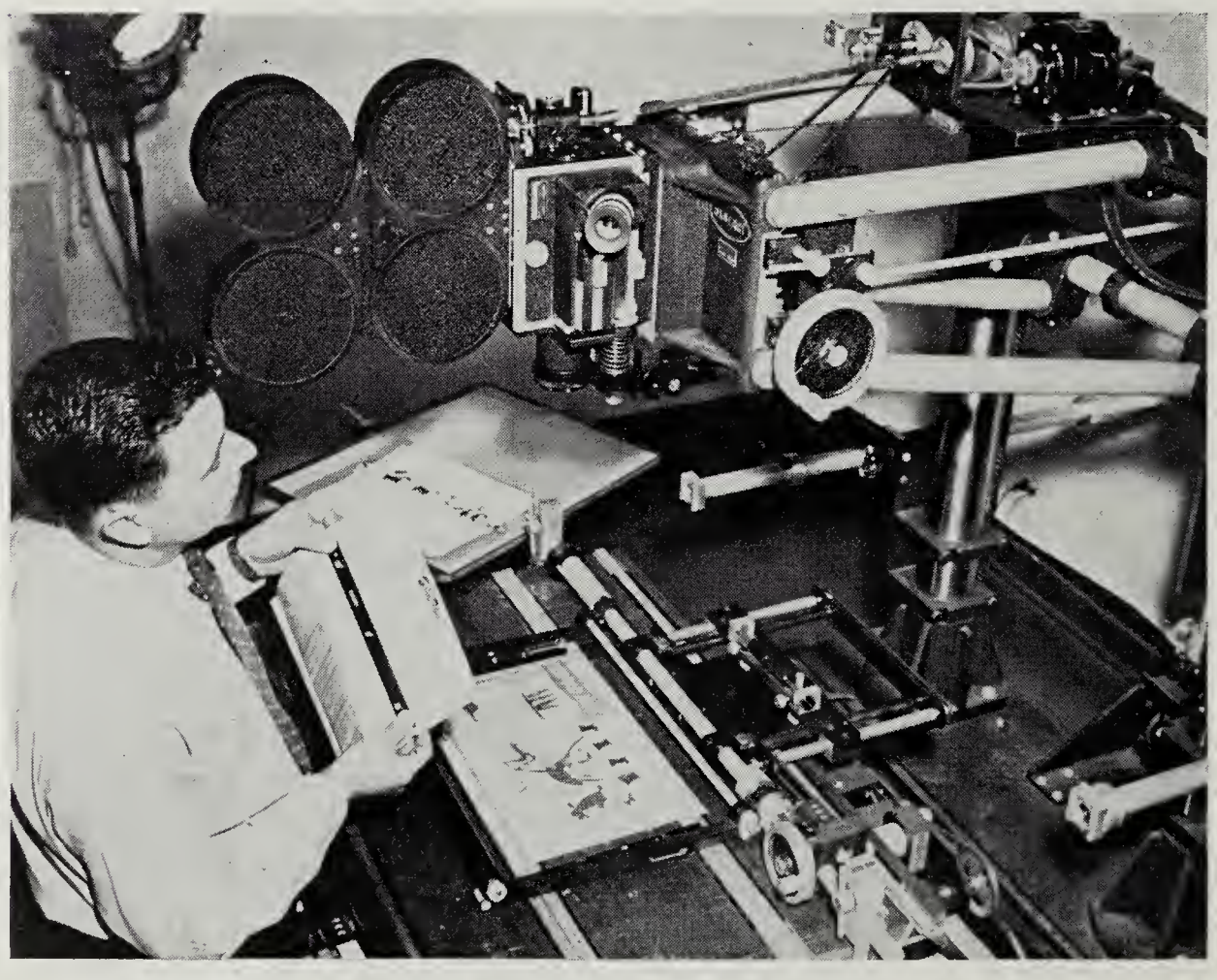
(Continued from Page 362)

order to see a subject or scene to be photographed in the contrasts it would appear on film it was only necessary to view it through a deep-blue viewing glass. All color as such then became unidentifiable and the scene was observed in the approximate tonal values that would be recorded on film.

As black-and-white negatives were improved and made more sensitive (and faster in speed)—and with the subsequent introduction of color films—it became necessary to alter the filtering components of the viewing glass.

When panchromatic film came into general use, some cameramen continued to use the deep-blue colored viewing glass because it rendered the scene in monochrome; but it was soon discovered that the relative brightness did not always register on film as it appeared when looking through the viewing glass. Medium blue no longer registered as almost white, nor bright red as black

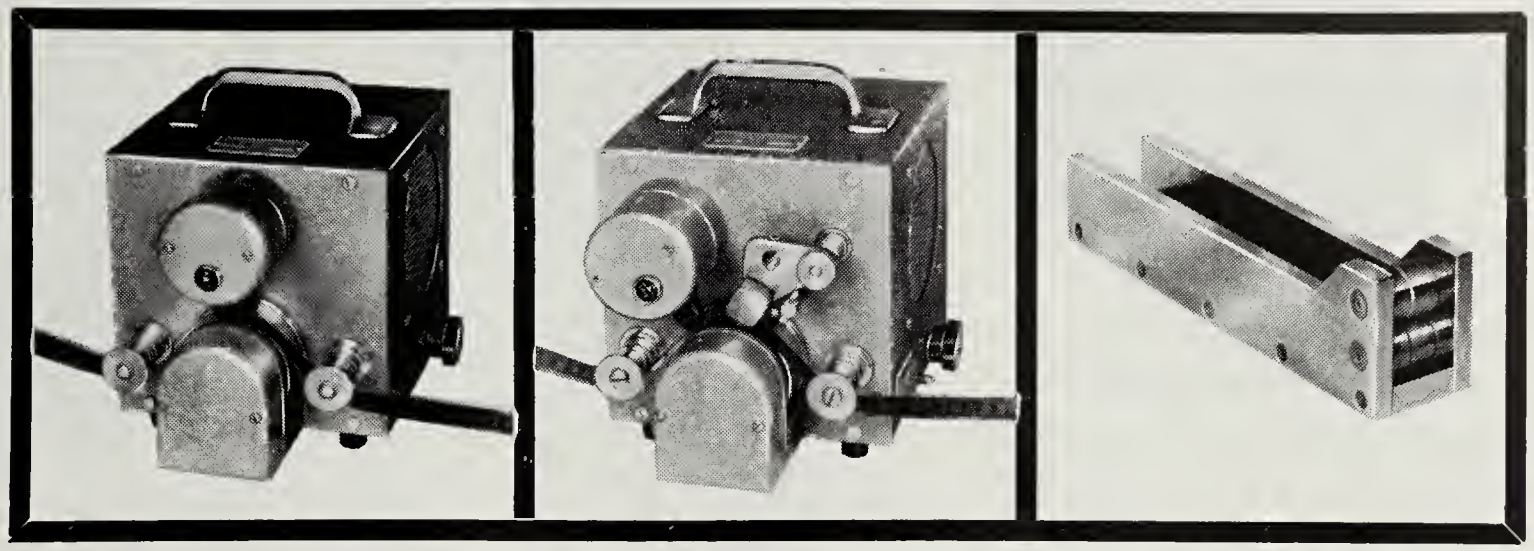
One Animation Camera For 16mm or 35mm



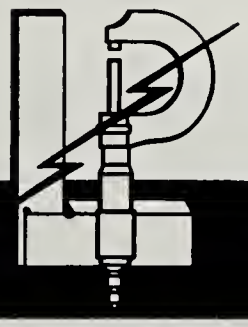
GORDON PETTY, chief cameraman, Batten Films, Division of Rapid Grip & Batten Co., Toronto, Canada, shooting an animation sequence with new Oxberry combination 35mm/16mm camera. Formerly, it was necessary to mount and dismount two different cameras in order to accommodate 35mm and 16mm projects. Batten Films is presently turning out about 50% of the television film commercials produced in Eastern Canada.

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as they had on color-blind emulsions. The result, of course, was the development of a viewing glass which rendered colors in approximate monotones comparable to the brightness range registered on panchromatic film. Thus the Panchromatic Viewing Glass was born.

When color negative for daylight use was developed, a need arose for a complete new type viewing glass—something that was not anticipated, because all colors of the spectrum were expected to register on color film in their natural hues. However, the contrast range of daylight color film proved to be much shorter than that seen by the eye; it was not capable of recording a scene in which there were extreme highlights and deep shadows, and doing justice to both.

Technicolor Motion Picture Corporation was among the first to meet the problem. It developed a neutral contrast viewing glass which consisted of a filter neutral in color and with a density rating of 2.0 and having a production tolerance of plus or minus 5%.

The two leading cameras used in the studios in Hollywood today—Mitchell and Technicolor—have adaptations of the viewing glass built into the camera's viewer. With the Mitchell, a panchromatic viewing glass is an integral part of the optical viewer, which becomes operative when the camera is racked

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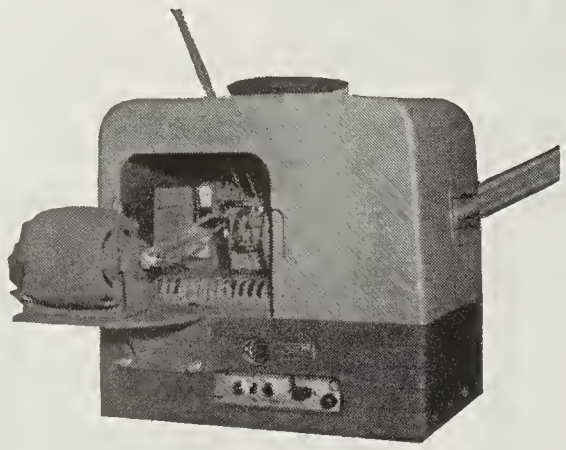
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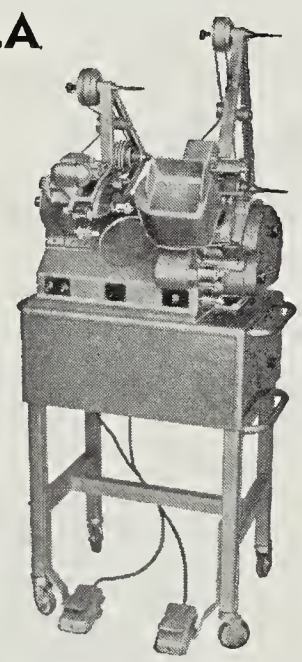
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over. The Technicolor cameras have a neutral density viewing glass, more generally referred to as an "ND filter," installed in the finder's system.

In spite of such built-in conveniences, however. the director of photography often has need for the popular little monocle-like viewing glass, which he invariably wears suspended by a neck cord. With most cameramen, it is in constant use whenever they are directing the placement of lights or, on exteriors. the booster lights or reflectors.

When the cameraman looks at a scene through the viewing glass, the brightness reaching the eye is reduced sufficiently so that he can judge, not only the general appearance of the scene as it will appear on the film when photographed, but also determine whether the lighting contrast it too great to record successfully on color film. Should this be the case, and since he cannot increase exposure sufficiently to record the shadow detail satisfactorily without over-exposing the highlights and burning them up, the obvious step is to direct more light into the shadows to modify excessive contrasts. The viewing glass is a handy tool for checking contrasts in such an operation.

The introduction of color negative balanced for mazda light made it necessary to develop a completely new viewing glass for the stock. Photo Research Corporation. Hollywood, which makes the "Spectra" viewing glasses, have developed a new glass which has incorporated into the filter system additional correction components besides the neutral factors required to produce the correct viewing contrast.

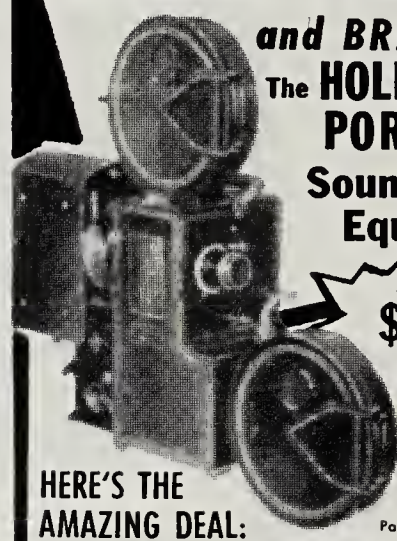
A color contrast viewing glass can be helpful to the 16mm cameraman as well as the amateur cine photographer, too; whether he uses any or all of the range of Kodachrome emulsions or Ansco Color. the use of a viewing glass can insure greater fidelity of color and correct contrasts.

CINEMATOGRAPHY IN SMALL STUDIO PRODUCTION

(Continued from Page 365)

production to the 16mm medium and color. Filming was now accomplished with a Maurer camera enclosed in the studio's regular 35mm Raby blimp, by now ingeniously rigged by engineers at Camera Equipment Company to permit the use of live sound on the set and to enable the assistant cameraman to follow-focus. Atmospherically, since the religious film made good use of non-professionals in the role of actors, the whole proceedings took on the air of a semi-documentary. In unobtrusive contrast. the cast was placed in a thoroughly simple church setting designed to sug-

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gest and suggest only, without specific identification, the presence of a pulpit, a few pews, and a stained glass window. Thus, the pictorial accent remained on people and their thoughts (off-camera "voices") or reactions to a preacher's delivery.

For the first cameraman and crew it was a challenge to have to film in two different sections of the studio, not necessarily simultaneously, but in a sense of preparedness, at least on short notice. This touch of spontaneity was required by the fact that various important members of the clergy who were due to arrive for film talks—many of them came from far corners of the world—often drifted into the studio (on invitation) without warning. Their presence, fittingly enough, was accommodated briefly but effectively on a separate set placed in another section of the studio, pre-lit, pre-set for sound, and otherwise made ready for filming except for slight realignment of the camera itself. With all camera positions previously designated, this final dolly maneuver took only a few moments to execute. Thus was the entire half-hour color production, stocked with a dozen-or-so additional epilogue treatments for various distribution areas, brought in on a three day schedule without overtime.

With the completion of this assignment, our crew started immediately on a three-week industrial assignment in an extended area of the mid-west, almost without pausing for breath!

This time the subject looked problematical. Black automobile tires in color. Production cameras used were the Maurer and a Ciné-Special, used alternately depending upon the nature of the scene. A semi-documentary, the film told how a newly-designed tire tread goes into manufacture in Ohio, only to be put through murderous endurance tests on the road in Texas at the peak of a scorching heat wave; and in addition, to be subjected to further trial in and about an Illinois research laboratory. To say that such background material (namely black tires and huge black factory interiors) failed to defy the cinematographer in his use of slow-speed 16mm Commercial Kodachrome, would be to evade the facts of the case. But the production did carry beautifully in color in the long run because, at least in part, subtle backgrounds of colored no-seam paper were introduced wherever possible to unobtrusively "warm the atmosphere." By the same token, no energy was spared to make creative use of key lighting for tire tread sequences. Mere intensity of illumination, it might be noted, did not necessarily do the trick alone, but the *angle* from which a key light was aimed made all the difference in the world. Hence, not a single close-

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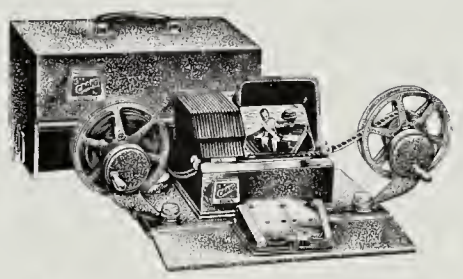
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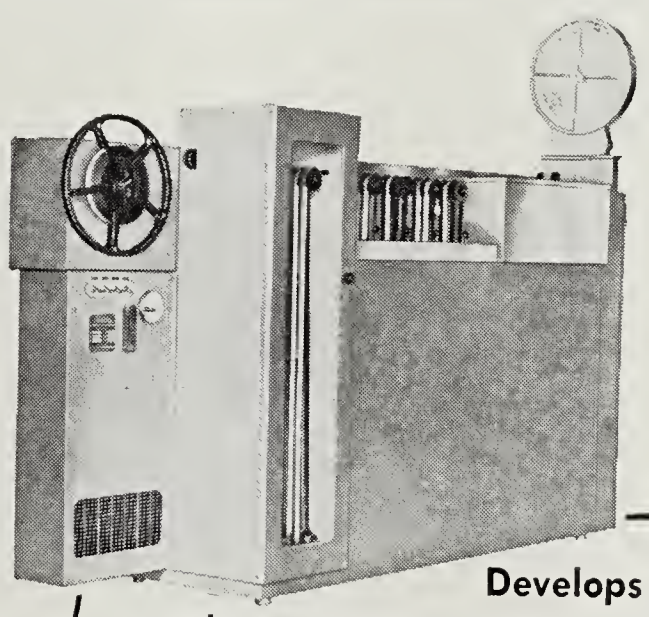
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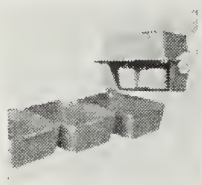
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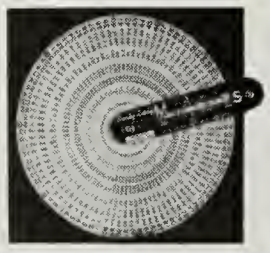
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up of a tire in the finished picture was without tread detail.

Now only twenty-eight days remained to wind up the studio's big schedule, with the most diversified assignments yet to come. No sooner had the crew concluded the tire production in the midwest than the Navy beckoned again with a 35mm information film, this time a location project in a huge Pennsylvania supply depot. The subject: dehumidified warehouse storage.

An advance man relayed the report that some of the warehouse areas to be photographed were as spacious as the inside of a major studio sound stage. Recognizing the lighting problems, the producer and cameraman agreed that the ideal film to use would be ultra-speed Tri-X Negative; quickly-conducted tests confirmed an A.S.A. exposure rating of 400. Lighting equipment consisted of four 2000-watt deuces, a half dozen 750-watt kegs, some RFL2 photofloods and "scoop" floods. An Eyemo camera was added to the Mitchell equipment to enable the cameraman to shoot from comparatively inaccessible vantage points high in the warehouses.

Five days, including time for travel to and from New York City, saw the job completed. So well, in fact, that the Navy letter commissioned the studio to shoot some additional sequences for the same film in another depot near Boston, Massachusetts. It might be interesting to note here that even though no changes occurred in the cameraman's manner of working—"*get that shot regardless of the odds*"—an unwitting element of circumstance late one day during the filming of the extended assignment very nearly cost the man his life! To wit:

One shot in particular was important enough to justify working in an exceptionally crowded storage hut. In order to set up for the best possible camera angle, the cameraman literally wedged himself into a tight position halfway behind the Mitchell (on a tripod) and the metal framework of the hut. The atmosphere was warm and humid, inducive to perspiration. As a routine procedure, scenes were being pre-slated as soon as they were set up; the assistant cameraman held the slate before the camera; the cameraman, taking the cue, racked the carriage over and *threw the switch*. By some irony of circumstances he was all but electrocuted right on the spot!

Immediate investigation failed to disclose any existing factory hazards, crossed power lines, or defective camera mechanism, but a careful review of the circumstances left little doubt in anybody's mind that the cameraman may have quite innocently created a hazard on his own accord. Namely, (*a*) his back, saturated with perspiration, had been in direct contact with the metal framework behind him, while (*b*) both of his hands had been touching some metallic portion of the camera, specifically at the time that he threw the switch. These extraordinary factors caused his body to conduct so much electricity, he "froze" into a partial state of coma for a full *twenty seconds* before some quick-witted worker managed to break the power line at its source outside the hut.

Back in the studio in New York two days later, the concluding surge of film variety began anew. To get the production ball rolling, forty energetic children and five professional musicians one day completely filled one side of the studio for the filming of a 16mm short that rallied a point for musical appreciation; whereupon Yehudi Menuhin, the world-renowned violinist, earnestly upheld the virtues of the same subject by contributing on a different morning to a prologue sequence. Presently, the studio mood changed back to 35mm TV commercials, plugging in turn, spray guns, bread, and diamond rings. Then the shift was to pocket-sized versions of concert opera in plain dress. Needless to say, it was one glorious hodge-podge and challenge after another, climaxed in due course by two final film topics completely different from anything that had gone before.

One of these was the spectacular 500-mile Indianapolis Speedway Race, a classic as seen in 16mm color, documented on race day by an augmented crew of at least six cameramen stationed at vantage points all around the great oval track. Every cameraman's lens had to be keyed to the excitement of the event, right around the clock, for the simple reason that second takes were impossible.

Last but by no means least on the agenda was the choicest film assignment of them all. A dramatic but sincerely-conceived social documentary treating the subject of Gerontology. Filmed in 35mm black-and-white (later to be reduced to 16mm for national distribution), it had the blessing of one of the most understanding scripts ever to be prepared on the subject of old age, alive not only with character and human interest, but also with the intent to reach into the heart of the matter via the compelling, tell-tale faces of real people. Here, at last, was a small studio cameraman's golden opportunity to invest the "Hollywood touch." Thus, key scenes were photographed on studio sets with tireless attention to mood and drama. Perfectly-cast professional actors, mutually selected by the director and cameraman prior to production, warranted this special care. While sequences with bona-fide old folks were

filmed in "model" rest homes elsewhere to lend authenticity to the narration. It was truly a *tour de force* for cameraman and director alike, the half-hour production going to the editing after only twelve days of camera work.

It's as much of a challenge to tackle the camera in small studio production as it is a first-rate thrill to assume the responsibility. Furthermore, it is within the ken of any cinematographer—if he likes his work—to make something good out of an assignment regardless of the odds, or for that matter, regardless of the film category.

BRING CHARACTERS TO LIFE

(Continued from Page 366)

be more convincing than rags and tatters.

The clothes themselves should indicate just as much as their condition. Taste and character can be deduced from casual tweeds or a dapper pinstripe. Screen girls should not be merely fashionable; their dress ought to say something about their personality.

How many times have you judged the character of a fellow-passenger in a train or bus by the title of the book he is reading? It's a common weakness. But it can be a boon to the film maker who's trying to show his hero as an individualist, a historian or an escapist.

Other props can be equally telling, Umbrellas, spectacles, newspapers, sports equipment and cameras have strong powers of suggestion. The husband with a shopping bag or a girl with ice-skates slung over her shoulder are given an extra depth by their props. Don't overlook the potentialities of such trappings and trimmings.

Settings, dress and props together answer the whens, wheres and hows of characterization. But the most vital aspect has yet to be considered. After these frills have made their impact, what is it that finally influences your reaction to a stranger?

You may meet him in pleasant circumstances, under conditions which sug-

(Continued on Page 382)

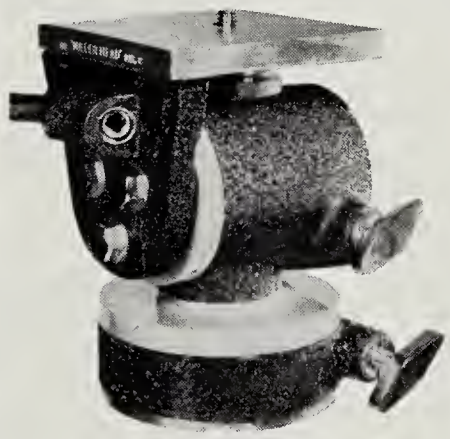
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Who, where and what the industry's cameramen were shooting last month.

ALLIED ARTISTS

• HARRY NEUMAN, ASC, "Chasing Trouble," with Huntz Hall and Adele Jergens. George Blair director.

• ERNEST HALLER, ASC, "The Cruel Tower," with John Ericson and Mari Blanchard. Lew Landers, director.

• CARL GUTHRIE, ASC, "The Oklahoman," (CinemaScope & Color) with Joel McCrea and Vanessa Brown. Francis Lyon, director.

AMERICAN NATIONAL

• JOHN MESCALL, "TV Readers' Digest." TV. Various directors.

• WILLIAM A. SICKNER, ASC, "Medic," TV, (Medic TV Prods.) with James E. Moser, Frank La Tourette, and Virginia Martindale. James E. Moser, director.

• MONROE ASKINS, "The Man Called X," TV, (Ziv-TV) with Barry Sullivan, Eddie Davis, director; "West Point Story," TV, (ZIV-TV) with Robert Vaughn. Leon Benson, director.

• CURT FETTERS, "Science Fiction Theatre," TV, (Ziv-TV) with Susan Cummings and Jackson Bradford. Herb Strock, director.

CALIFORNIA STUDIOS

• JOSEPH BIROC, ASC, "Cavalry Patrol", TV, (Filmaster Prods. Inc.) with Dewey Martin. C. Marquis Warren, director.

• KENNETH PEACH, ASC, "Freemont the Trail Blazer," TV, (Filmaster Prods.) with Steven Cochran, Ray Nazarro, director.

• FREDERICK GATELY, ASC, "The Rosemary Clooney Show" TV. (Mayville Corp.) with Rosemary Clooney. Dick Darley, director.

COLUMBIA

• BURNETT GUFFEY, ASC, "Night Fall," with Aldo Ray and Anne Bancroft. Jacques Tourneur, director.

• RAY RENNAHAN, ASC, "Guns of Fort Petticoat," (Brown-Murphy Pictures, Inc.), with Audie Murphy. George Marshall, director.

• KIT CARSON, "Father Knows Best," TV, (Screen Gems) with Robert Young. Jacques Tourneur, director.

• CHARLES LAWTON, ASC, "Full of Life," with Judy Holliday and Richard Conte. Richard Quine, director.

• BEN KLINE, ASC, "Cha, Cha, Cha," with Mary Kaye Trio and Perez Prado. Fred Sears, director.

• HENRY FREULICH, "The White Squaw", with David Brian and May Wynn. Ray Nazarro, director.

• DESMOND DICKENSON, "Fire Down Under," (Warwick Prod. shooting in Trinidad) with Rita Hayworth, Robert Mitchum and Jack Lemmon. Robert Parrish, director.

• GERT ANDERSEN, ASC, Ford Theatre, TV, with Howard Duff and Janet Blair. James Nilsen, director.

• FRED JACKMAN, "The Circus Boys," TV, (Screen Gems). Douglas Heyes, director.

WALT DISNEY

• WALLY CASTLE, "The Hardy Boys," TV, Charles Haas, director.

• GORDON AVIL, ASC, "The Mickey Mouse Club," TV. Gilbert Miller, director.

FLYING A

• BILL BRADFORD, ASC, "Buffalo Bill, Jr.," TV, with Dickey Jones and Pappy Cheshire. George Archinbaud and Frank MacDonald, directors; "Annie Oakley," TV, with Gale Davis. George Archibaud and Frank MacDonald, directors.

JERRY FAIRBANKS STUDIO

• JOHN NICKOLAUS, JR., "Judge Roy Bean," TV, (Quintet Prods.) with Edgar Buchanan. Watt R. Browne, director.

FOX WESTERN AVENUE STUDIOS

• KARL STRUSS, ASC, "My Friend Flicka," TV, (TCF Television) with Gene Evans and Anita Louise. John English, director.

• LLOYD AHERN, ASC, "Mama's Boarding House," TV, (TFC Television) with Paul Douglas and Alexis Smith. Julius Bricken, director.

GENERAL SERVICE STUDIOS

• ROBERT PITTACK, ASC, "Private Secretary," TV, (Chertok TV, Inc.) with Ann Southern, Don Porter and Ann Tyrrell. Oscar Rudolph, director.

• NEAL BECKNER, "The Adventures of Ozzie and Harriet," TV, (Stage 5 Prods.) with Ozzie, Harriet, David and Ricky Nelson. Ozzie Nelson, director.

• JAMES VAN TREES, ASC, "Burns & Allen Show," TV, (McCadden Prods.) with Gracie Allen and George Burns. Frederick deCordova, director: Carnation & B. F. Goodrich commercials. TV. Frederick de Cordova, director.

• HARRY WILD, ASC, "Bob Cummings Show," TV, (Laurmac Prods.) with Bob Cummings and Rosemary DeCamp. Rod Amateau, director: Winston commercials, TV, Rod Amateau, director.

GOLDWYN STUDIOS

• LEE GARMES, ASC, "The Sharkfighters," (CinemaScope & Color) (Samuel Goldwyn Jr. Prods. UA release) (Shooting in Cuba) with Victor Mature and Karen Steele. Jerry Hopper, director.

• WILLIAM WHITLEY, ASC, "Crossroads," TV, (Federal TV, Inc.) with Rod Cameron, Ralph Murphy and other directors.

• GEORGE CLEMENS, ASC, "Schlitz Playhouse of Stars," TV, (Meridian Prods.). Jim Sheldon, director.

• HAL MOHR, ASC, "The Boss," (Boss Prods. for UA release) with John Payne, William Bishop and Doe Avedon. Byron Haskins, director.

INDEPENDENTS

• GUY ROE, ASC, "Gangbusters," TV, (Visual Drama, Inc.) Bill Kern, director.

• FRANK PLANER, ASC, "The Pride and the Passion," (Technicolor; VistaVision) Stanley Kramer Prod. for UA; shooting in Spain) with Cary Grant and Frank Sinatra. Stanley Kramer, producer-director.

• FRED WEST, ASC. "The She-Creature," (Golden State Prod. for American International) with Chester Morris and Marla English. Edward Cahn, director.

• J. BURGI CONTNER, ASC, "I Cast No Shadow," (W. Lee Wilder Prod. shooting in New York) with Eric Fleming and Nancy Malone. W. Lee Wilder, director.

• GEORGE ROBINSON, ASC, "Dance With Me, Henry," (Bob Goldstein Prod. for UA) with Abbott and Costelllo. Charles Barton, director.

• LEE GARMES, ASC. "The Big Boodle (Lewis Blumberg Prod. for UA release; shooting in Cuba) with Errol Flynn and Rossana Rory. Richard Wilson, director.

• RAY FERNSTROM, ASC, "Home Show," TV, for NBC with Arlene Francis. Bill Witman, director.

• STUART THOMPSON, ASC, "Waldo," TV, (Kimridge Prods. with Gil Stratton. Arthur Hilton, director.

KEY WEST STUDIOS

• WALTER STRENGE, ASC, Series of religious pictures, TV. William Claxton, director.

KLING STUDIOS

• GLENN MACWILLIAMS, Richfield Oil commercial, TV. Hank Ludwin, director.

• WILLIAM MELLOR, ASC, Short subject, TV, (Todd-AO). Hank Ludwin, director.

ART LINKLETTER PLAYHOUSE

• ALAN STENSVOLD, ASC, "People Are Funny," TV, (John Guedel Prods.) with Art Linkletter. John Guedel, director.

KTTV STUDIOS

• MACK STENGLER, ASC, "Liberace," TV (Dudley Prods.) with Liberace. Duke Goldstone, director.

• KENNETH PEACH, ASC. "Five Steps To Terror," (Grand Prod. for UA release) with Ruth Roman and Sterling Hayden. Henry S. Kesler, producer-director.

METRO-GOLDWYN-MAYER

● Fred Jackman, Jr., "Julie," (Arwin Prods. for MGM release) with Doris Day, Louis Jourdan, Barry Sullivan and Frank Lovejoy. Andrew Stone, director.

● Robert Bronner, "The Opposite Sex," (CinemaScope & Color) with June Allyson and Jeff Richards. Dave Miller, director.

● Robert Surtees, ASC, "Raintree County," (65mm and Color) with Montgomery Clift and Elizabeth Taylor. Edward Dmytryk, director.

● John Alton, "Tea and Sympathy," with Deborah Kerr and John Kerr. Vincente Minnelli, director.

● Russell Harlan, ASC, "Teahouse of the August Moon," (Color; CinemaScope) (shooting in Japan) with Marlon Brando and Glenn Ford. Daniel Mann, director.

● Fred A. Young, ASC, "The Barretts of Wimpole Street," (CinemaScope & Color) (shooting in England) with Jennifer Jones and Sir John Gielgud. Sidney Franklin, director.

● Joseph Brun, ASC, "A Man Is Ten Feet Tall," (Jonathan Prod., shooting in New York City) with John Cassavetes and Kathleen Maguire. Martin Ritt, director.

● George Folsey, ASC, "The Power and the Prize," with Robert Taylor, Burl Ives and Elisabeth Mueller. Henry Koster, director.

MOTION PICTURE CENTER

● Nick Musuraca, ASC, "The Line Up," TV, (Desilu Prod.) with Warren Andersen. H. Morse, director.

PARAMOUNT

● Charles Lang, ASC, "Gunfight at the O K Corral," (VistaVision & Technicolor) with Burt Lancaster, Kirk Douglas, John Ireland and Jo Van Fleet. John Sturges, director.

● Loyal Griggs, ASC, "Three Violent People," (VistaVision & Technicolor) with Charlton Heston, Anne Baxter and Gilbert Roland. Rudy Mate, director.

● Ernest Laszlo, ASC, "The Loves of Omar Khayyam," (Technicolor; VistaVision) with Charlton Heston, Anne Baxter and Gilbert Roland. William Dieterle, director.

● Lionel Lindon, ASC, "The Lonely Man," (Technicolor; VistaVision) with Jack Palance and Elaine Aiken. Henry Levin, director.

● Daniel Fapp, ASC, "Hollywood or Bust," (Technicolor; VistaVision) with Dean Martin, Jerry Lewis and Pat Crowley. Frank Tashlin, director.

● Sam Leavitt, ASC, "Flamenco," (VistaVision and Color) (Being photographed in Spain.) Don Siegel, director.

● Jack Warren, ASC, "Search for Bridey Murphy," (VistaVision) with Teresa Wright and Louis Hayward. Noel Langley, director.

REPUBLIC STUDIOS

● Ed Colman, ASC, "Dragnet," TV, (Mark VII Prod.) with Jack Webb. Jack Webb, director.

● Bud Thackery, ASC, "Frontier Doctor," TV, (Studio City TV Prods.) with Rex Allen. William Witney, director.

● John MacBurnie, ASC, "Crusader," TV, (Revue Prods.) with Brian Keith. Pete Adrian, director; "Jane Wyman Show," TV, (Revue Prods.) with Jane Wyman. Sid Lanfield, director.

● Herb Kirkpatrick, "The Millionaire," TV, (Don Fedderson Prods. with Ruth Hussey. Sobey Martin, director.

● Jock Feindel, ASC, Kellogg's, Kaiser Aluminum, and Fuller Paint commercials, TV. Pete Adrian, director.

RKO

● George Diskant, ASC, "Stage Seven, Hall of Stars," TV, (Four Star Prods.).

● Paul Vogel, ASC, "Public Pigeon Number One," with Red Skelton and Vivian Blaine. Norman McLeod, director.

HAL ROACH STUDIOS

● Lucien Andriot, ASC, "The Life of Riley," TV, with William Bendix. Abby Berlin, director.

● Paul Ivano, "Stories of John Nesbitt," TV, with John Nesbitt. Various directors.

● Jack Mackenzie, ASC, "Code 3," TV. Various directors.

● Edward Fitzgerald, ASC, "The Charlie Farrell Show," TV, with Charles Farrell. Rod Amateau, director.

SUNSET STAGE

● Fred West, ASC, Shaffer Pen commercial, TV, (5 Star Prod.) Chester Glassley, director.

● Ray Fernstrom, ASC, Gem Razor commercial, TV, (5 Star Prod.) Chester Glassley, director.

● Frank Tompkins, California Federal Savings commercial, TV, (5 Star Prod.) Chester Glassley, director.

20TH CENTURY FOX

● Milton Krasner, ASC, "Bus Stop," (CinemaScope & Color) with Marilyn Monroe, Don Murray and Arthur O'Connell. Joshua Logan, director.

● Wilfred Cline, ASC, "The Last Wagon," (DeLuxe Color; CinemaScope) (shooting at Sedona, Ariz.) with Richard Widmark and Tommy Rettig. Delmar Daves, director.

● Joe Macdonald, ASC, "One in a Million," (DeLuxe Color; CinemaScope) with James Mason and Barbara Rush. Nicholas Ray, director.

● Leon Shamroy, ASC, "Best Things in Life Are Free," (Technicolor; CinemaScope) with Gordon MacRae and Sheree North. Michael Curtiz, director.

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● Russell Metty, ASC, "Battle Hymn," (CinemaScope) with Rock Hudson. Douglas Sirk, director.

● Ellis Carter, ASC, "The Mole People," with John Agar and Cynthia Patrick. Virgil Vogel, director; Eastman Kodak commercial, TV. Jack Daniels, director.

● Harold Lipstein, ASC, "The Great Man," with Joseph Ferrer and Mona Freeman. Jose Ferrer, director.

● George Robinson, ASC, "Gun for a Coward," (Technicolor) with Fred MacMurray and Chill Wills. Abner Biberman, director.

● Irving Glassberg, ASC, "Four Bright Girls" (Technicolor; CinemaScope) with George Nader and Julie Adams. Jack Sher, director.

● Arthur Arling, ASC, "Tammy," (Technicolor; CinemaScope) with Debbie Reynolds and Leslie Nielsen. Joseph Pevney, director.

● Maury Gertsman, ASC, "I've Lived Before," with Jock Mahoney and Leigh Snowden. Richard Bartlett, director; Colgate commercial, TV. Wil Cowan, director.

● Bill Margulies, "Fort Laramie," (Bel-Air Prod.) with John Dehner and Frances Helm. Lesley Selander, director.

● Clifford Stine, ASC, "The Incredible Shrinking Man," with Grant Williams and Randy Stuart. Jack Arnold, director.

● Russel Metty, ASC, "Mister Cory," with Tony Curtis and Martha Hyer. Blake Edwards, director.

● Ellis Carter, ASC, Colgate, Eastman Kodak, Budweiser, commercials, TV, Wil Cowan, director.

● Jock Feindel, ASC, Colgate, Eastman Kodak commercials, TV. Wil Cowan director.

● Lester White, ASC, Eastman Kodak commercial, TV. Wil Cowan, director.

● Charles Welborn, Prell commercial, TV. Wil Cowan, director.

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● Robert Burks, ASC, "The Wrong Man," (Alfred Hitchcock Prod., shooting in New York City) with Henry Fonda and Vera Miles. Alfred Hitchcock, director.

● Floyd Crosby, ASC, "The Old Man and the Sea," (WarnerColor; wide-screen) (shooting in Cuba) with Spencer Tracy. Fred Zimmermann, director.

● Ted McCord, ASC, "The Girl He Left Behind," with Tab Hunter and Natalie Wood. David Butler, director.

● Ray Fernstrom, ASC, "Warner Bros. Presents," TV, with Clit Young. Gordon Douglas, director; Koenekamp Process Shots. Mervyn LeRoy, director.

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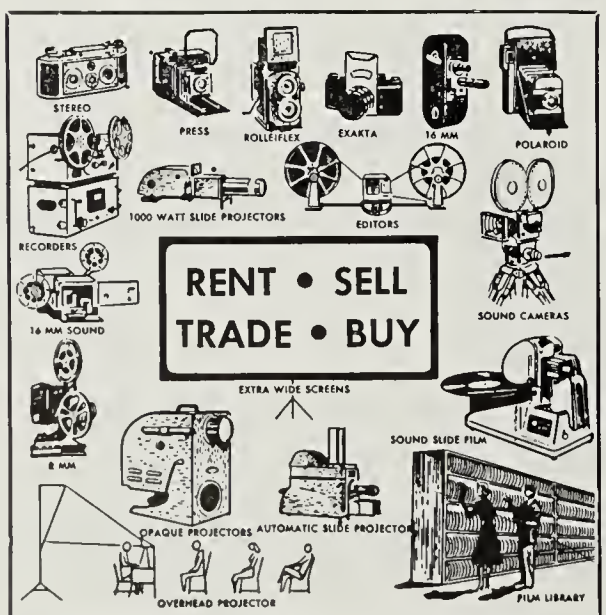
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BRING YOUR CHARACTERS TO LIFE

(Continued from Page 379)

gest you share common interests and outlooks, and you may find him of agreeable, well-groomed appearance. Yet within the first few seconds of meeting, all these factors may be completely cancelled out by some action on his part.

For action is the keynote to character. Whatever their outward appearances, it is what our acquaintances do that eventually commends or condemns them in our eyes. The "moment of truth" can be immediate, or it can take a lifetime. On the screen we can make it instantaneous.

This doesn't mean that the action has to be dramatic or sensational. A coin dropped in a beggar's cap, a helping hand for an old lady or a small courtesy by a driver can be an immediate pointer. So, too, can an impatient gesture or an angry glance.

Perhaps the most indicative actions are those made privately. The youngster who beams proudly at his reflection in the mirror as he dresses and the girl who hops about ecstatically as she speaks on the phone are at once established as three-dimensional people.

These establishing shots should never appear as diversions from the main thread of the plot. Indeed, as their purpose is to sum up a character's most important features as briefly as possible, they must be strongly bound to the film's central theme.

A little discipline in scriptwriting can soon unite swift characterizations and plot. Keep the settings in the natural environment of your story, and let the introductory action be not an aside but a comment on the role the new character is to play.

A romantic comedy concerning two hard-up students might begin with a collision between them outside a public library. The man promptly picks up the books the girl has dropped, noting the titles as he does so. The audience, of course, do the same. In three or four shots we establish that both youngsters are studious (the setting) and broke (their clothes), that she has romantic inclinations (her books) and that he is breezy (the collision), helpful and curious (his reaction to the titles).

Once you've got your characters off to a satisfactory start, don't let them degenerate into puppets. It's not what they do—it's the way that they do it that counts. Don't be content to let them simply perform the plot's essential requirements. Allow them scope to stress their individuality.

Habits can be particularly revealing. The frown, the tug at the ear, the anxious tie fiingering all are cinematic details ready for the emphasis of the closeup. Even in a ten-minute short a repeated mannerism can help to create a character.

Create is the operative word in scriptwriting. Your audience sees your players fresh, with no preconceived ideas of their personality or behavior. It is up to you to make them intriguing from the opening shot. Unless your audience is gripped by your characters, the most ingenious of plots will not be sufficient to maintain their interest.

BOB BAILEY'S 16MM PROCESSOR

(Continued from Page 357)

fy every time I get a new idea," he says.

And what seems almost remarkable to him, in retrospect, is the small number of mechanical breakdowns the machine has experienced in its five year existence.

"I suppose it's because of the constant maintenance we give it," Bailey says. "Four of us in the shop know every screw in the thing, and the minute it doesn't even *sound* right, we get to work."

To be sure, the sound of Bailey's machine is one of its distinguishing features. It wasn't built to be soundproof, and it's not. It seems to be pitched somewhere between a two-table bridge party and a newspaper printing press. Visually, too, Bailey's machine is impressive in action.

Wheels, pulleys, gears, and film turn in full view. Fans hum. Rollers spin. There is action in all three rooms. The speedometer indicates that processing is underway at 45 miles per hour. The top speed is around 60, minimum speed 28.

And that's the way its been for the more than 1,500,00 feet of 16mm film that have passed through Bailey's creation. During football seasons, particularly, the machine is going night and day, as film records of high school and college games rush through the lab.

All of which makes it possible to justify the hundreds of man hours Bailey and his men have put into the odd-look-

ing but practical processor. And to Bob Bailey it represents not only an investment of almost $6000 and many months of work, but it shows what one can do when you're convinced you can build your own "better mousetrap."

SET CONSTRUCTION

(Continued from Page 361)

the special double-headed nails which are commonly used in motion picture studios. These nails may be driven hard to secure the brace in place, at the same time leaving the second head above the flat or floor surface to facilitate easy removal with a claw-hammer.

Obviously, the joint between flats will show unless it is covered adequately before paint and wallpaper is applied. Ordinary gummed Kraft paper tape may be used for this, moistening and applying it over the seam before finishing with wallpaper or paint.

Hollywood studio decorators usually use a simple water-color paint, on the order of Kalsomine. This can be washed off simply by applying water, but is usually left on and painted over when the flat is used again. To give the rough textured effect of a plastered or stucco wall, a quantity of sawdust is mixed with the paint.

Any kind of wallpaper may be applied to a flat. There are some patterns that are ideally suited to motion picture sets such as brick, stone, wood textures, etc. Many of the "marble" walls and columns seen in major studio sets are the result of using wallpaper having a marbleized pattern.

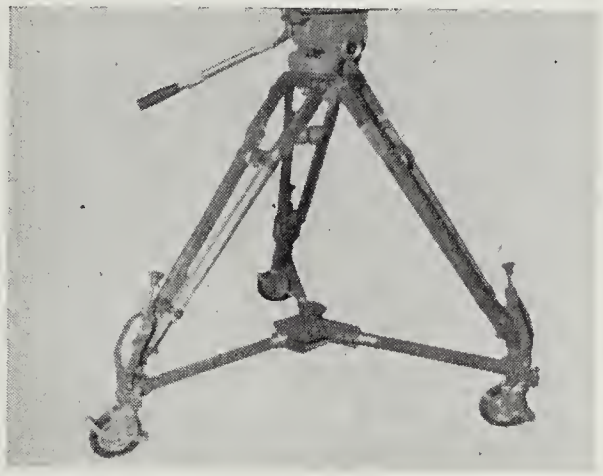
As flats are used and re-used, it is unnecessary to remove wallpaper previously applied. Several layers of wallpaper may be applied before it becomes necessary to strip the flats clean for reuse. Where the flats are made of plywood, hot water or steam will hasten the removal of the paper. With composition wallboard, water should never be used; the paper should be carefully stripped off with a putty knife or other similar tool.

There invariably will be instances where it is desired to shoot reverse angles, and where the set has but two or three walls, it will call for another wall panel to be shifted into place to represent the opposite side of the room. This is termed a "wild" walll, which means that it is readily removable to accommodate the camera whenever necessary. Put in place, it completes the set. But by merely pulling out a few nails and removing the supporting braces, the wall may be removed to give the camera crew more room in which to work.

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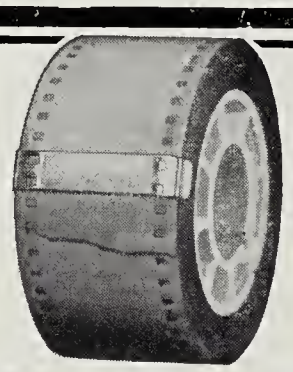
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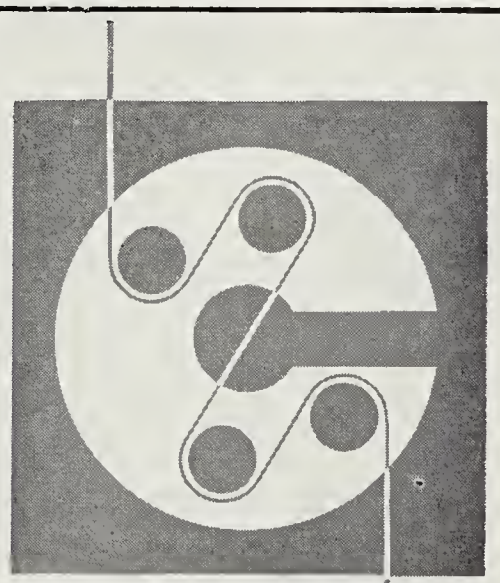
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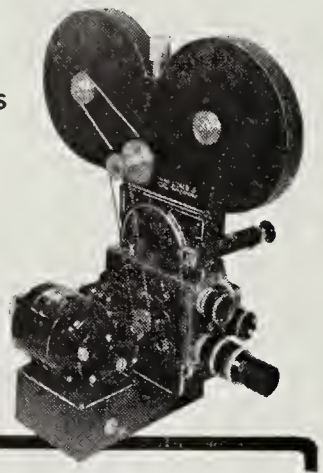
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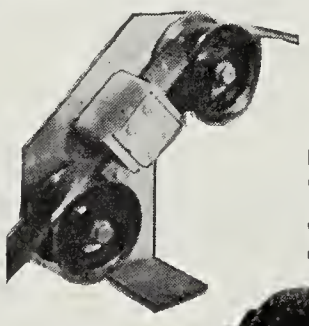


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quired for set lighting, set and scaffolding are completely separate units in standard studio practice. Thus, "wild" walls may readily be removed without affecting the lamps.

Some small commercial film studios which operate in quarters converted for the purpose often do not have the ceiling space necessary for regular scaffolding. In such instances, lights must be hung from ceiling hangers or secured along the top edge of the sets. Adjustable metal lamp hangers that slip over the top of the flats and "Alligator" lamp-clamps facilitate the use of small lighting units for back-lighting and for effect lighting on walls, etc.

Simple clamp-on reflectors and photoflood lamps also may be used for this type of lighting. Fitted with light-concentrating "snouts" and No. 2 or No. 4 photofloods, these units afford excellent professional lighting effects for small sets when clamped to the top of the flats.

A simple set that consists of straight, flat walls may be adequate for the action, but it isn't always conducive to the most effective lighting and photography. One has only to observe the average interior set in a motion picture screened at a theatre to note how much the professional cinematographer gains from playing with contrasting highlights and shadows at points where the set-wall has a little projection or is recessed. This, you also can accomplish by simply making up a few special flats of normal height and only one or two feet in width. With these, it is possible to provide interesting offsets or recesses in the wall contours that otherwise would appear flat and uninteresting pictorially. At the same time they offer the cameraman opportunity to get an illusion of relief in his set lighting.

Flats needn't necessarily be flat. For greater variety and scope in set design, curved flats are essential. This calls for a curved frame, top and bottom, and steaming the plywood so it may be curved to fit the contour of the frame. Where composition wallboard is used, the curve may be easily accomplished without use of steam. Curved flats are a more complicated job of carpentry than the ordinary flat, but it can be done, even by non-professionals. Stock curved sections come in very handy in the studios in remodeling old sets and set sections to give them a "new look."

Some studios use flats covered with muslin instead of plywood or wall board. For the non-professional they are not recommended because such flats require extra reinforcement to prevent the surfaces "rippling" every time a door is opened or closed.

Perhaps the greatest secret in professional use of indoor sets is making the fullest possible use of the camera's tremendous power of visual suggestion. What you actually build on the stage doesn't matter nearly so much as how you cause the camera to "see" and record it. The actual set need extend but a few inches beyond the side-lines of the field of the lens used on the camera —just enough to give a safe margin for finder parallax. Any additional construction is wasted effort and expense.

The thing to remember is that the motion picture camera is an impressionist. You can fool it into seeing things that do not actually exist, by the power of "suggestion" that is implied in the lighting, the camera angle, etc. But you start with the set—construction of the set, that is. And for this you begin by assembling flats which, as we have suggested here, can easily be built by anyone handy with carpenter tools.

MOVIES ON TAPE

(Continued from Page 352)

signal fed directly to the Ampex Videotape recorder. Motion picture films would not be involved in any way whatever. However, besides the unresolved problem of inferior picture quality as compared to that obtained with film, there is also the problem of how to cut and edit video-tape pictures.

In the application of video-tape recording to TV, the recording is continuous and the recorded program is complete, requiring no cutting or editing. The editing of video-tape in the same manner as editing motion picture film is impossible and this one factor alone precludes its use in the production of motion pictures. This is not to say that this obstacle cannot be overcome, but for the foreseeable future, at least, it is highly improbable.

INDUSTRY NEWS

(Continued from Page 348)

A feature of the camera is its extremely light weight. With fully-loaded magazine containing 50 feet of film, it weighs less than 5½ pounds. Standard 50-foot film cartridges are used.

Shutter speed is 1/250 of a second. This speed cannot vary with changes in frame rate as the shutter design entails two blades each rotating in the same direction. The forward blade, or shutter blade, has an angular cutout of 92 degrees and rotates at a constant speed of 64 R.P.S. The second blade has a 115 degree angular cutout and rotates at the same speed as the frame rate, i.e., 64, 32 or 16 f.p.s. With this arrangement the required shutter speed of 1/250 second is maintained.

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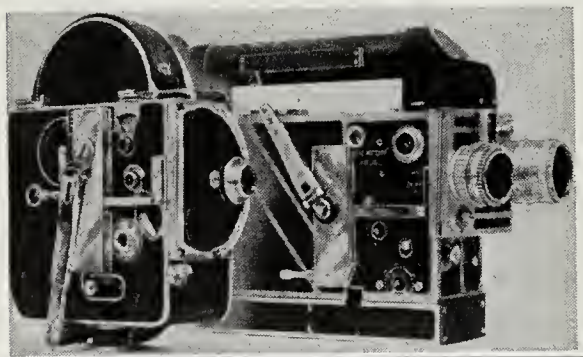
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WHAT'S NEW

(Continued from Page 344)

New York 10, N. Y., announces a reduction in the price of the Dual Sixon photoelectric exposure meter from $17.50 to $13.95. The Dual Sixon meter is completely self-contained and self-protected, requiring no case. A chrome safety chain is furnished with each meter.

Non-Slip Belt

Of interest to designers and builders of motion picture and sound recording equipment is a new-type non-slipping belt said to permit greater accuracy in transmission or rotational motion than any previously known method. Described as a herringbone-indexing type, the belt transmits rotational motion with greater accuracy than gears, over same ratios normally encountered in gear drives.

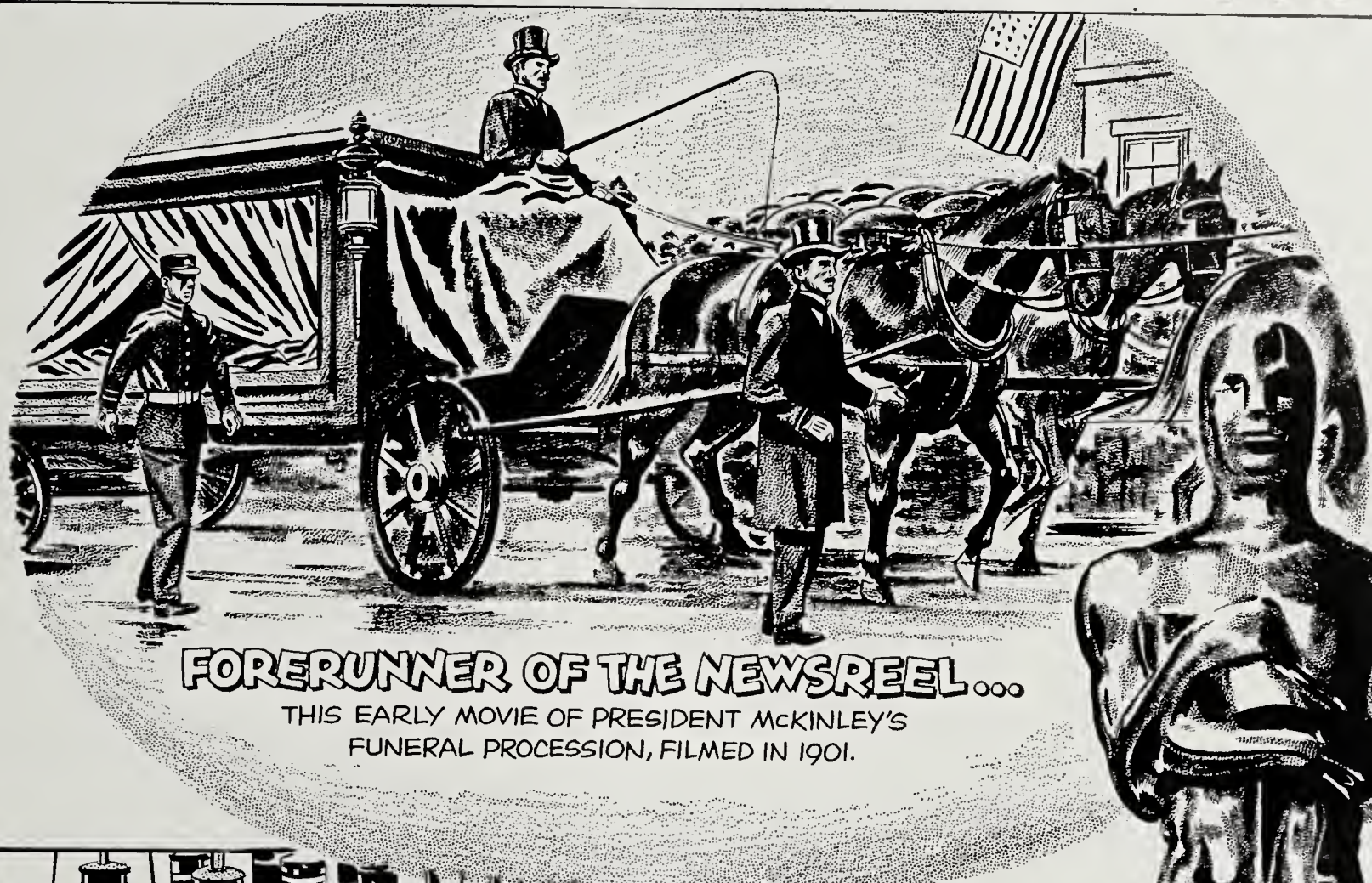
V-shaped tread of belt tends to continuously wedge and thus center belt in corresponding V-tread of gears, allowing gears to be constructed without belt-retaining rims.

Manufacturer is Kinevox Division of Electromation Co., Burbank, Calif.

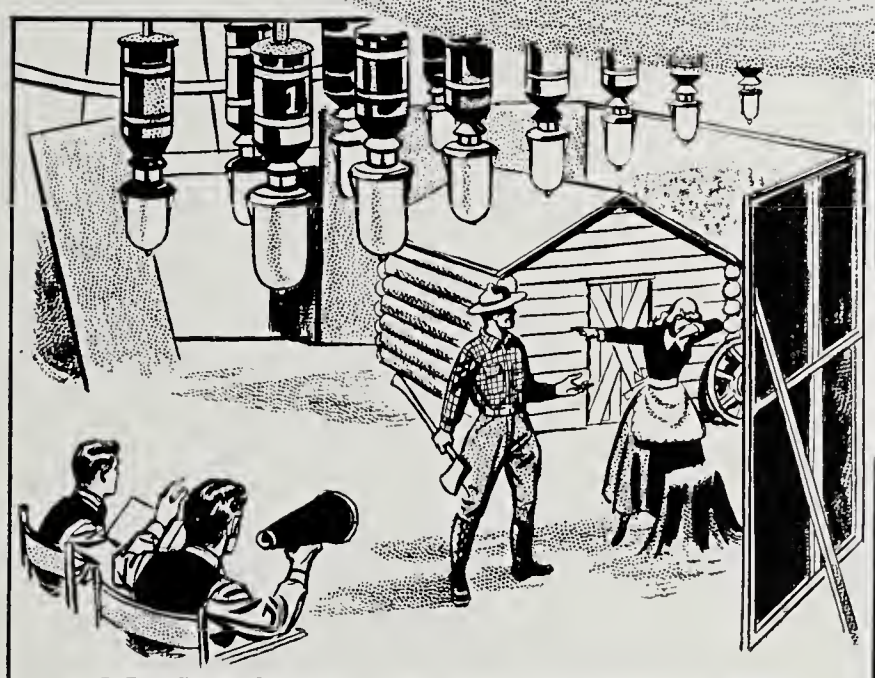
Superama "16" Lens

Radiant Mfg. Co., 2627 W. Roosevelt Road, Chicago 8, Ill., announces a new anamorphic lens for photographing and projecting CinemaScope type 16mm motion pictures with an aspect ratio of 2.66 to 1. Company will also distribute the Panatar "16" anamorphic lens for projection of wide aspect ratio films. It is variable between 2.00-to-1 and 2.66-to-1.

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JULY • 1956

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THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



In This Issue . . .

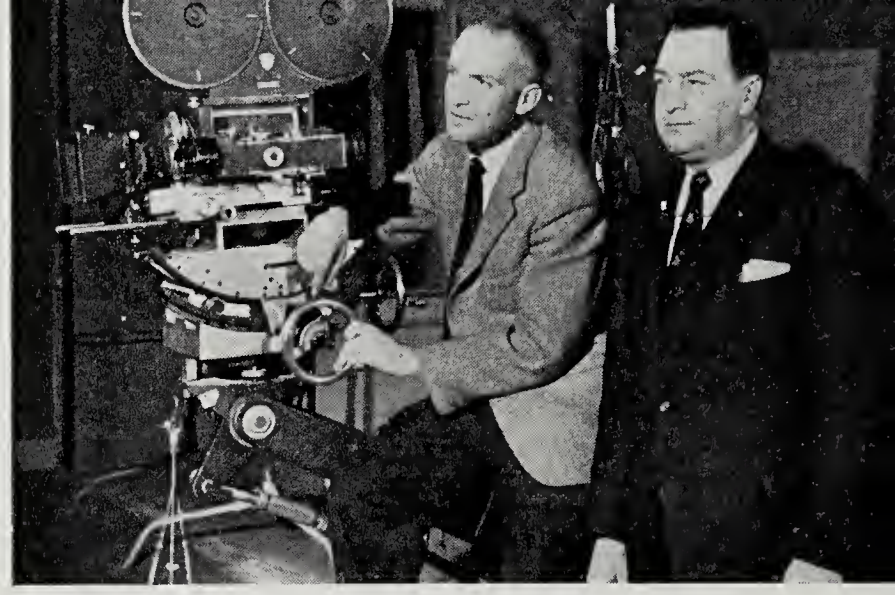
- Sub-zero Camera Operation
- Editing Technique for TV Films
- Putting the Edgar Bergen TV Show On Film

35c

FOREIGN 45c



Drummond Drury, Director of Photography shooting at Video Pictures, Inc., is primarily concerned with filming top-product TV commercials. He says, "We're interested in getting highest possible quality . . . and Du Pont 'Superior' 2 gives better images than any other black-and-white film we've ever used."



Du Pont Representative Joe Dougherty (right) is a frequent visitor at Video Pictures, Inc. He discusses technical aspects of using Du Pont Film with Mr. Drury.



Filming an automobile TV commercial requires top performance at every point. The long scale of Du Pont "Superior" 2 captures details in highlights and opens up shadows for best footage obtainable.

"Long scale, speed, fine grain...features that make Du Pont 'Superior' 2 ideal for TV filming!"

—reports **VIDEO PICTURES, INC.,** *one of New York's oldest producers*

"When shooting TV commercials, Video Pictures demands the utmost from a film," says, Drummond Drury, Director of Photography. "Du Pont 'Superior' 2 gives us fine grain to catch detail, long gradation and wide latitude to capture middle tones and record the image properly.

"For example, shooting automobile commercials is a case where good middle tone register is extremely important. In addition, clean highlights and remarkable shadow detail obtained with 'Superior' 2 record the set just the way we want it.

"The emulsion of 'Superior' 2 Motion Picture Film is more rugged than any we have ever tested," adds Mr. Drury. "It's much less susceptible to scratches from shooting and processing operations. And, by controlled development, we can increase film speed without danger of enlarging the grain. 'Superior' 2 has proved to be a film we can depend on to show the client's product as he wants it shown!"

Video Pictures insists that the release prints go on Du Pont Type 824 Fine Grain Low Contrast Positive . . . this film gives the low contrast necessary for good TV reproduction. They use Du Pont 802 B Sound Recording stock for their sound recording to complement the fine results obtained on "Superior" 2 and Du Pont Type 824 Low Contrast Positive stock.

FOR MORE INFORMATION, write or call the nearest Du Pont Sales Office (listed below) or the Du Pont Company, Photo Products Department, Wilmington 98, Delaware. In Canada: Du Pont Company of Canada Limited, Toronto.

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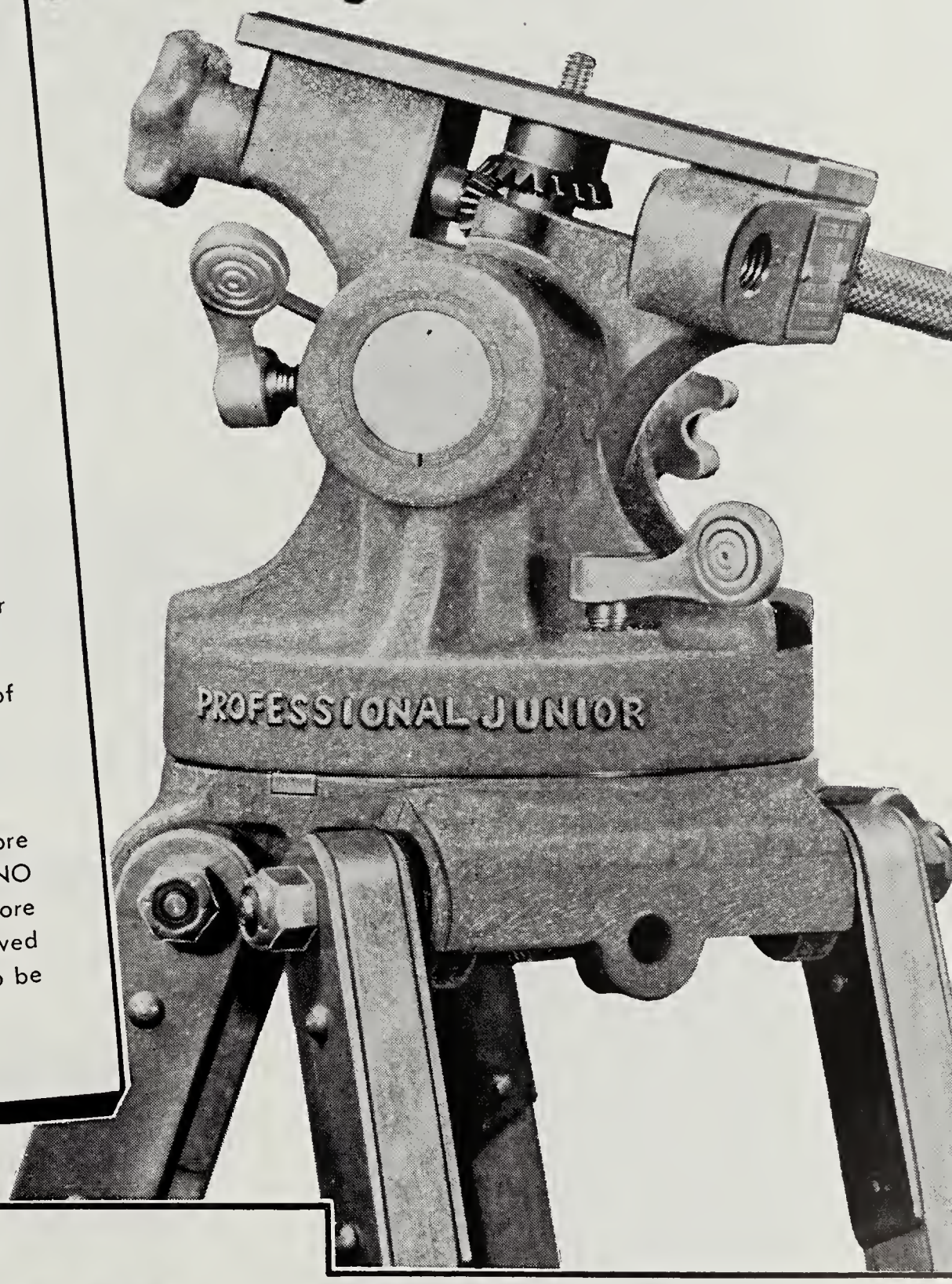
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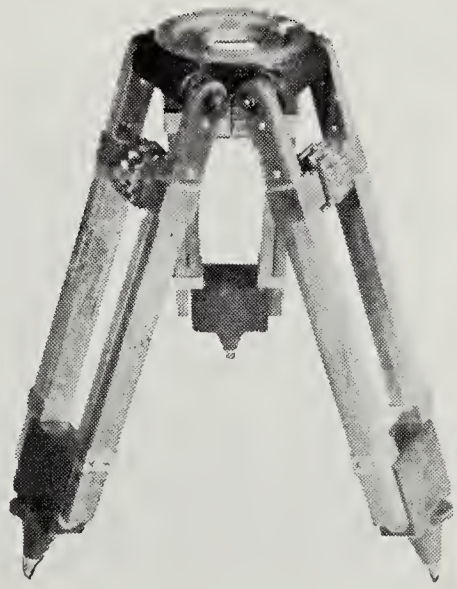




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PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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VOL. 37 JULY • 1956 NO. 7

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ON THE COVER

SOME OF THE nine Mitchell 35mm cameras that are used in photographing the Edgar Bergen TV show, "Do You Trust Your Wife?" are pictured on the cover this month. Show, which takes place before studio audience, is filmed continuously. Director of Photography Dan B. Clark, A.S.C. (center, foreground) keeps an eye on the cameras as photography progresses. In background, Edgar Bergen with Effie Klinker interviews two contestants. At Bergen's right is announcer Bob Lemond.

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBCRIPTIONS: United States and Canada, $4.00 per year; Foreign, including Pan-American Union, $5.00 per year. Single copies 35 cents; back numbers 40 cents; foreign single copies, 40 cents; back numbers, 45 cents. Advertising rates on application. Copyright 1956 by A. S. C. Agency, Inc.

Manufacturer's Twenty Member Matian Picture Unit sets up to shaot Northrap F-89D all-weather jet interceptor far sequences in Narthrop Troining Deportment film.

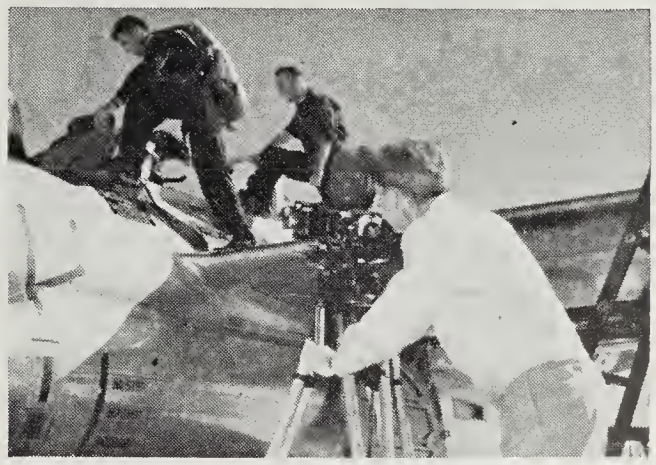
INDUSTRY'S USE OF 16MM CAMERAS BROADENS

Northrop Aircraft Demonstrates Expanded Industrial Use of Mitchell Cameras

Over 100,000 feet of film were shot last year by two 16mm Mitchell cameras operated by a full-scale motion picture unit at Northrop Aircraft. Operating daily throughout the year, these 16mm cameras provide impressive evidence of the rising role of professional motion picture equipment in American Industry today.

Northrop, a leader in airframe and missile manufacture, makes diversified use of their Mitchell cameras. Motion pictures range from employee activities to engineering test films—where re-shooting is impossible and where steady, accurately-framed film of superior quality is consistently delivered by Mitchell cameras.

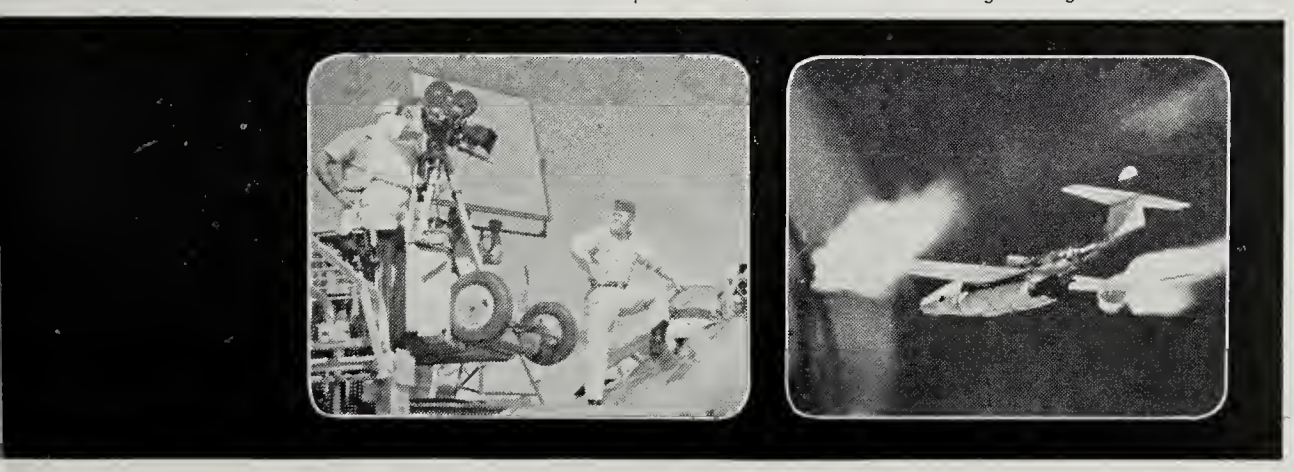
No other single camera is today used by American* Industry for such a broad range of filming requirements as is the Mitchell camera. Easy operating Mitchell cameras help create sales, meet delivery schedules, and systematize and accelerate research and development. For details about Mitchell equipment that will meet your specific needs, write today on your letterhead.



Alaska Baund test pilot Bab Lave and Columnist Marvin Miles being filmed by Mitchell camera for Narthrop Public Relations Department.

For Quality Control Film, Mitchell camera moves in for close shots of Scorpion F-89D.

104 Rocket Salva of twin-jet F-89D is captured on 16mm Engineering Test film.

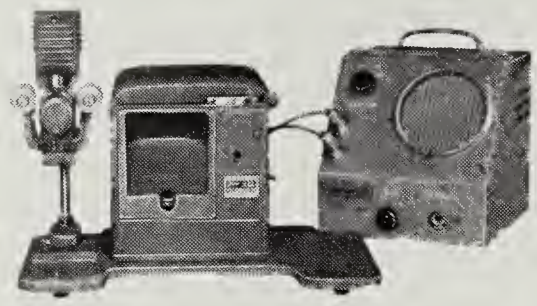


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***85% of professional motion pictures shown in theatres throughout the world are filmed with a Mitchell**

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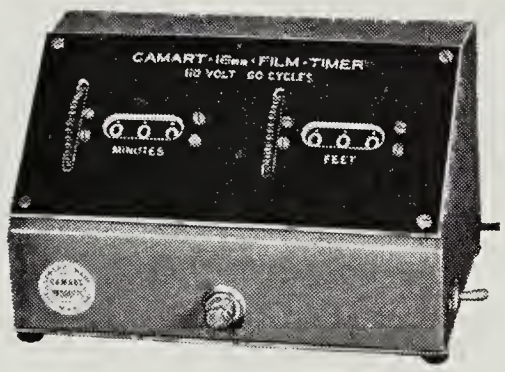
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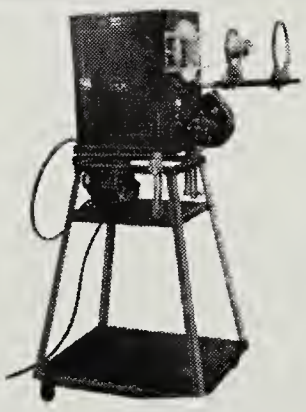
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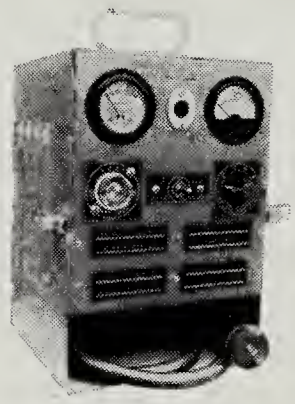
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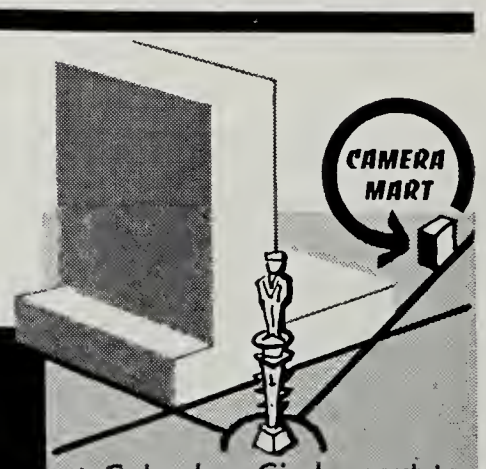
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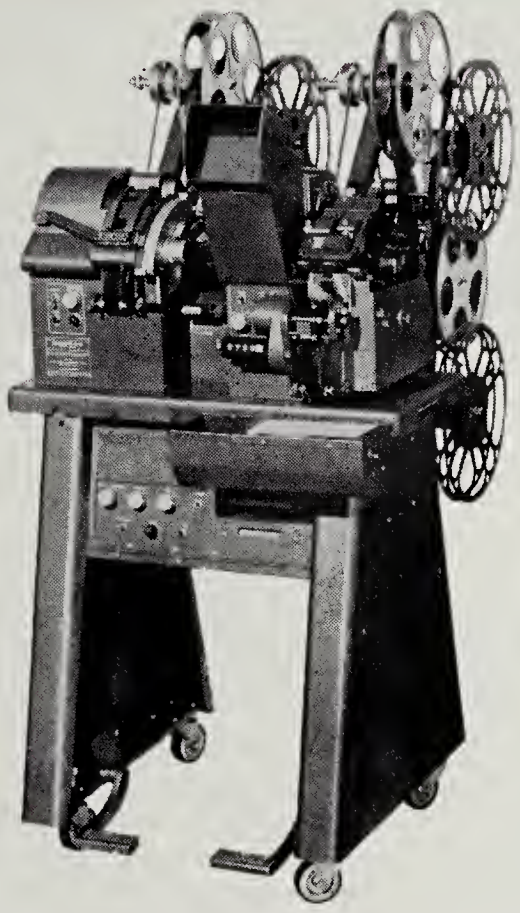


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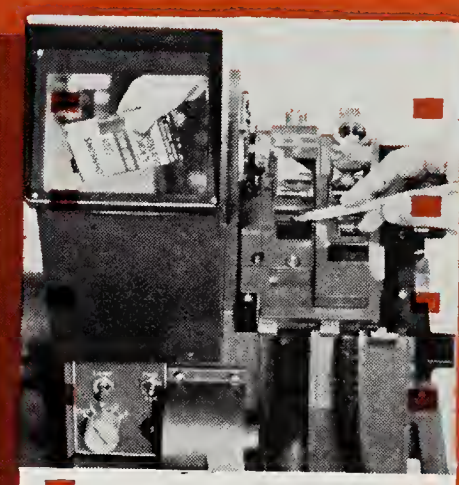
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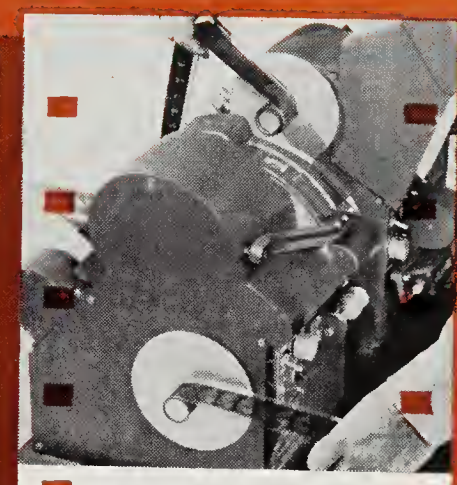
NEW J. G. McAlister "EDIMAC" RUNS 16MM AND 35MM SOUND AND PICTURE SIMULTANEOUSLY



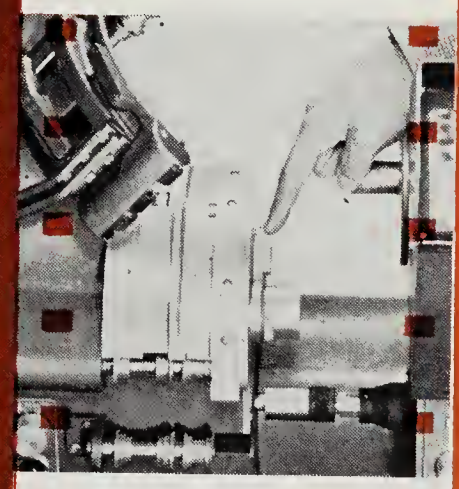
Now, for the first time, one editing machine runs 16mm film and 35mm film simultaneously with 16mm magnetic-optic and 17½mm magnetic or 35mm magnetic-optic



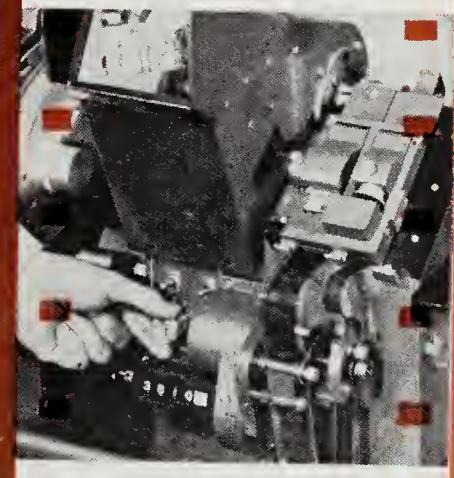
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Run negative film with absolute safety. Magnetic head never touches film while optic is in use.



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The EDIMAC cuts editing time up to 30%. Nothing is complicated. Every operation is simple, quiet, easy for anyone familiar with standard equipment. The principle's the same. But what an improvement!

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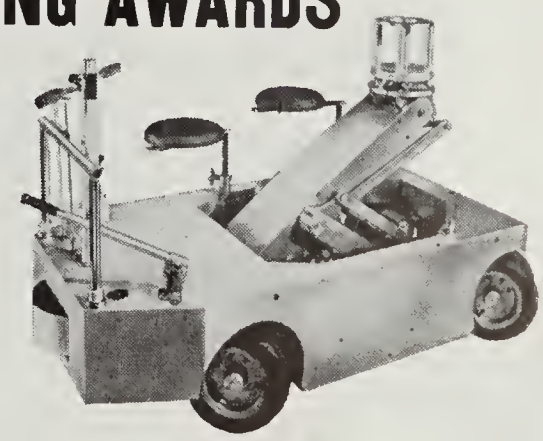
And that's not all. Scores of other important features boost your output, enhance your skill, solve all major editing problems.



TWO DOLL(IE)S WIN SUPPORTING AWARDS

Miss Jo Van Fleet wins Academy Award for "Best Supporting Actress" in "East of Eden," Warner Brothers.

J. G. McAlister Dual Steering "Crab Dolly," invented by Mr. Steve Krilanovitch, wins Academy Award for "Best Support of Camera" from Academy of Motion Picture Arts & Sciences. The J. G. McAlister "Crab Dolly" is being used in *all* motion picture studios.



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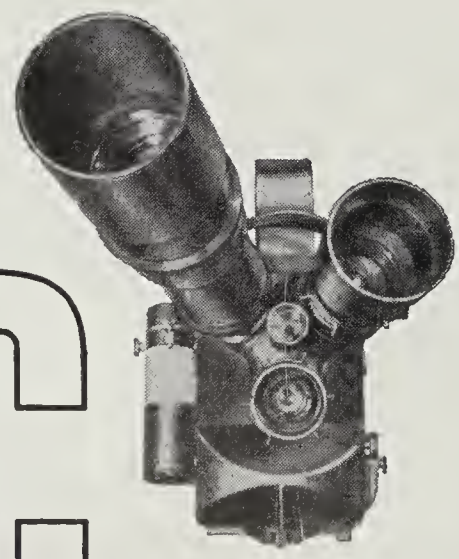
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HOLLYWOOD BULLETIN BOARD

News briefs about the A.S.C. its members, and important industry personalities



INTRODUCED to ASC members at Society's June dinner-meet by Consolidated Film Industries' Ted Hirsch (left) was Jack Goetz of same company. Latter subsequently was elected to Associate Membership in the Society.



VICTORY SIGN is given by actress Ruth Roman after viewing cinematographer Wm. Snyder's photography of Edmund Grainger's RKO production, "Great Day In The Morning," starring Miss Roman, Bob Stack and Virginia Mayo.

Harry Squire, ASC, cinematographer for the first two Cinerama features and the current Cinerama production, "Seven Wonders of the World," planed out for London last month with Lowell Thomas to begin shooting of the fourth Cinerama adventure-spectacle, which is to be directed by Otto Lang, noted for many Hollywood feature film successes.

A Globemaster flew the Cinerama camera and crew to New Delhi, India, where the expedition will begin its trek into remote valleys beyond the mountains.

• • •

Ellsworth Fredricks' notable photography of William Wyler's "Friendly Persuasion" is gaining raves and praise before the picture is released.

In a recent "sneak preview," 15 comment cards turned in by persons in the audience complimented the picture's photography.

And the *Hollywood Reporter's* Mike Connolly commenting on the picture wrote in his column: "...The great, GREAT performances in "Persuasion," however, are by Gary Cooper and the cameraman. Latter's liesurely, loving lensing of a Quaker community in Indiana in 1862 is akin to conjugating the verb "to love" in three-quarter time."

• • •

Harold Stine, ASC, who directs the photography of the Warner Brothers' TV series, "Cheyenne," starring Clint Walker, will be behind the camera on this series for another year, having had his contract renewed for another 12 months. This well-photographed video film series is seen weekly over the KABC-TV network.

• • •

Mack Stengler, ASC, who has directed most of the TV films produced by Guild Films, Co., Inc., last month began the photography of a new series for the same company titled "Captain David

(*Continued on Page 400*)

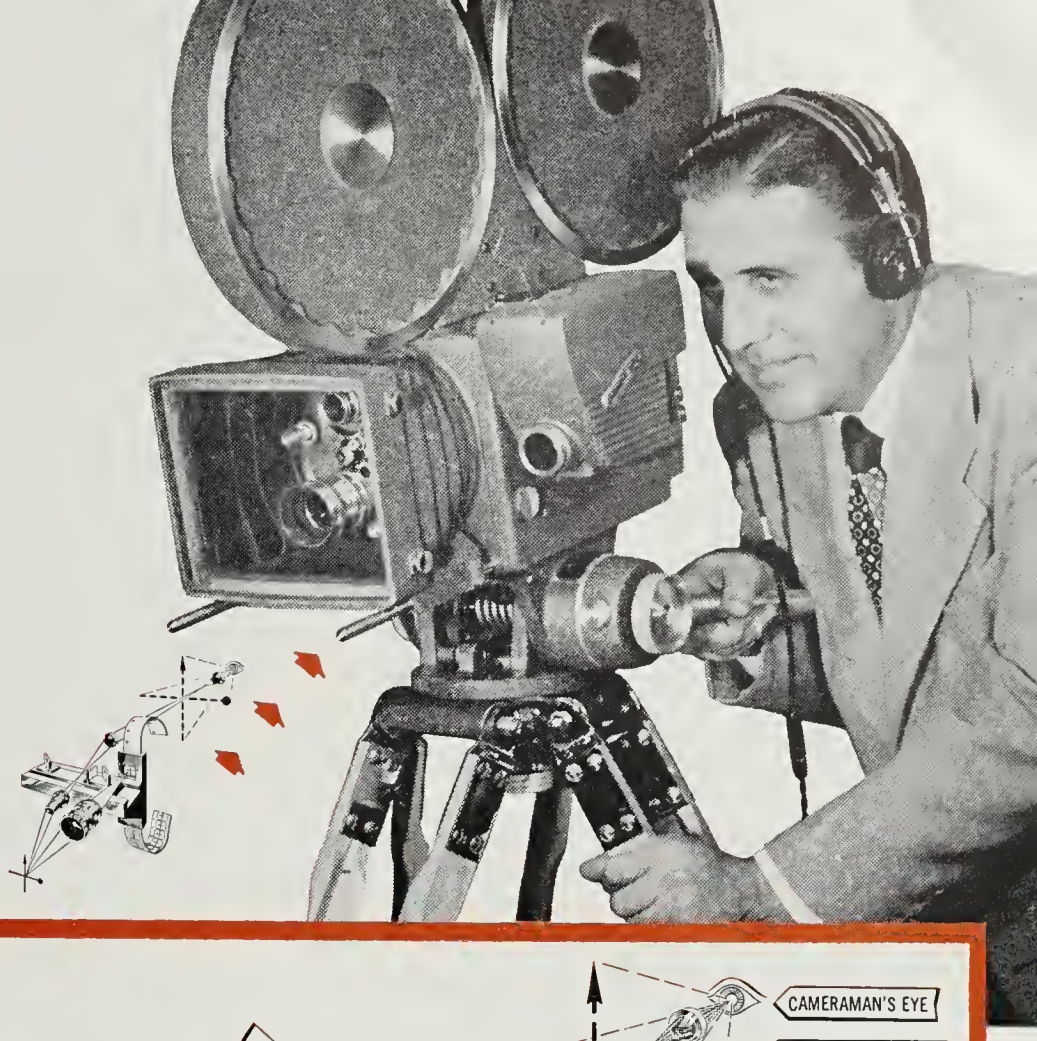


OZZIE MORRIS, British cinematographer who photographed John Huston's "Moby Dick" and who was a Hollywood visitor last month, was a guest of the American Society of Cinematographers. He spoke briefly on the photography of the Houston production, now in release.

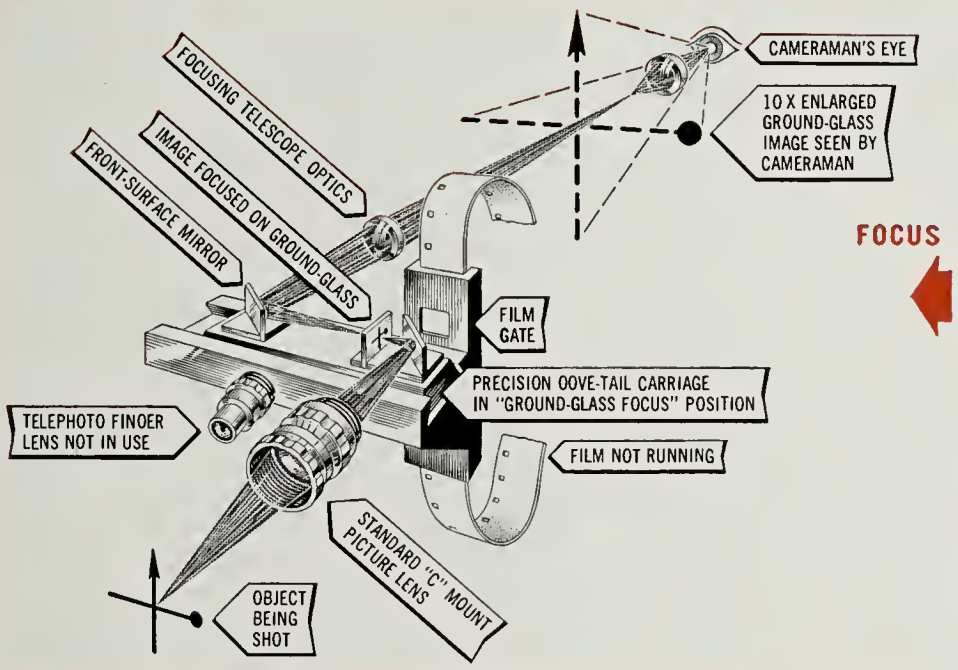
Auricon

"SUPER 1200" CAMERA

with Full-Frame Reflex Ground-Glass FOCUSING OPTICAL SYSTEM

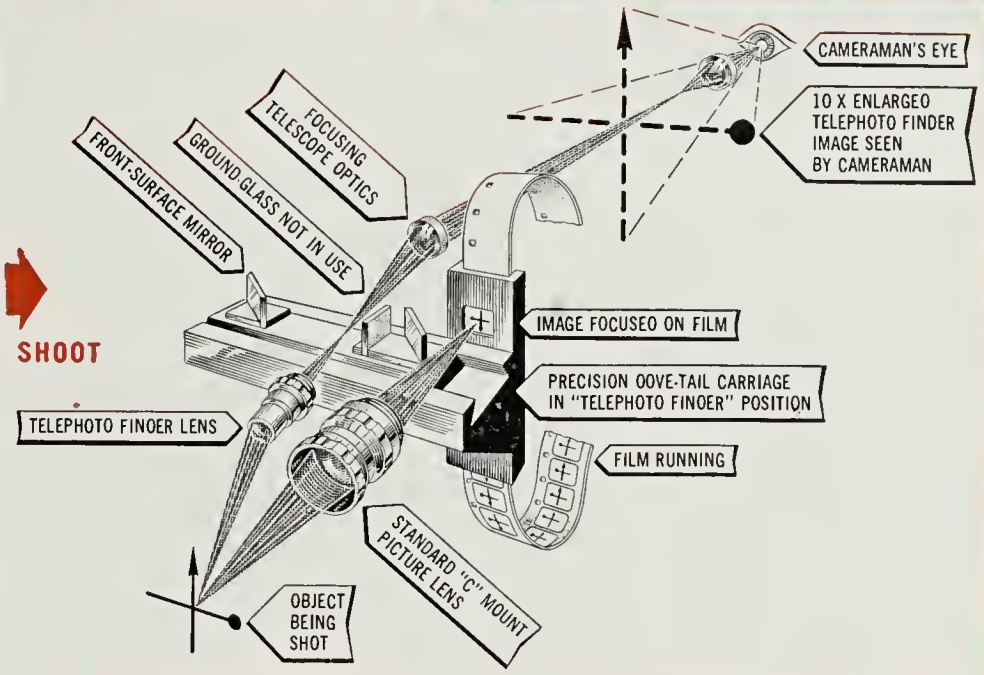


The unique and versatile features built into the 16mm Auricon "SUPER 1200" Sound-On-Film Recording Camera have prompted Producers and Cameramen to name the Super 1200..."Finest 16mm Sound Camera ever built!" This Camera is "Self-Blimped" for whisper-quiet Studio work, has 33 minutes of continuous film capacity, Variable-Shutter or Kinescope "TV-T" Recording Shutter, plus the combined "Rifle-Scope" Telephoto Finder and Reflex-Focusing Optical Systems illustrated below. Its only equal is another Auricon "Super 1200"...



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"Super 1200" Reflex Ground-Glass Focusing-Frame indicates the field covered by any focal-length lens at all distances. A 10X enlarged Ground-Glass image is seen by the Cameraman, for needle-sharp critical focusing.

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No Camera-weight shift on tripod legs when moving from focus to film-shooting position with the "Super 1200." Camera-body does not shift to focus, or shoot film, as Optical-System Dove-Tail Carriage is only moving part!

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- ★ Built-in Electric Camera Heater with automatic Thermostat-Control, provides reliable cold-weather Camera operation.
- ★ Geared Footage & Frame Counter with built-in neon-glow indirect light.
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- ★ 600 and 1200 ft. film Magazines available. Up to 33 minutes continuous filming.
- ★ During picture exposure, your film runs through the Auricon "Super 1200" Film-Gate with the light-sensitive film emulsion accurately positioned on jewel-hard Sapphire Surfaces, an exclusive Berndt-Bach feature (U.S. Patent No. 2,506,765). This polished Sapphire Film-Gate is guaranteed frictionless and wear-proof for in-focus and scratch-free pictures, regardless of how much film you run through the camera!
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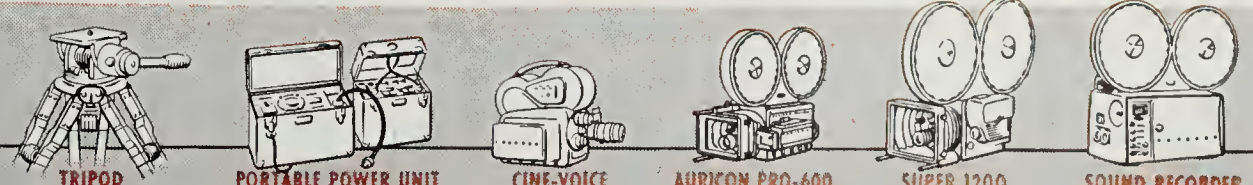
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Auricon Hollywood



Photographic Assignments

JUNE • 1956

Who, where and what the industry's cameramen were shooting last month.

ALLIED ARTISTS

• Ernest Haller, ASC, "The Cruel Tower," with John Ericson and Mari Blanchard. Lew Landers, director.

• Carl Guthrie, ASC, "The Oklahoman," (CinemaScope & Color) with Joel McCrea and Vanessa Brown. Francis Lyon, director.

• John Mescall, "Not of This Earth," with Paul Birch and Beverly Garland. Roger Corman, producer-director.

• Ellsworth Fredricks, ASC, "54 Washington Street," (CinemaScope & Color) with George Montgomery and Meg Randall. Paul Landres, director.

• Harry Neumann, ASC, "Bringing Up Joey," with Huntz Hall and Joi Lansing, Jean Yarbrough, director.

AMERICAN NATIONAL

• Curt Fetters, "The Man Called X," TV, (Ziv-TV) with Barry Sullivan. Eddie Davis, director; "Science Fiction Theatre," TV, (Ziv-TV). Paul Gilfoyle, director.

• Bob Hoffman, "West Point Story," TV, (Ziv-TV). Don Weis, director.

BILTMORE STUDIOS (New York)

• J. Burgi Contner, ASC, "Four Boys and a Gun," (Security Pictures for U.A. release.) William Berke, producer-director.

CALIFORNIA STUDIOS

• Fleet Southcott, "Gunsmoke," TV, (Film Center Prod.) with James Arness and Dennis Weaver. Ted Post, director.

• Lucien Andriot, ASC, "The Life of Riley," TV, with William Bendix. Abby Berlin, director.

• Hal McAlpin, "O. Henry Playhouse," TV, (Gross-Krasne, Inc.) with Thomas Mitchell. Peter Godrey and Barney Girard, directors; "Dr. Hudson's Secret Journal," TV, (Wesmor, Inc.) with John Howard. Peter Godfrey, director.

CARTHAY SOUND STAGE

• William Whitley, ASC, "The Lone Ranger," TV, with Clayton Moore and J. Silverheels. Earl Bellamy and Oscar Rudolph, directors.

COLUMBIA

• Kit Carson, "Father Knows Best," TV, (Screen Gems) with Robert Young. Jacques Tourneur, director.

• Charles Lawton, ASC, "Full of Life," with Judy Holliday and Richard Conte. Richard Quine, director.

• Desmond Dickenson, "Fire Down Below," (Warwick Prod. shooting in Trinidad) with Rita Hayworth, Robert Mitchum and Jack Lemmon. Robert Parrish, director.

• Gert Andersen, ASC, "The Country Husband," TV, (Playhouse 90 Screen Gems) with Frank Lovejoy and Barbara Hale. James Nilsen, director.

• Irving Lipman, "Ford Theatre," TV, (Screen Gems) with Phyllis Kirk and Phil Carey. Tony Leader, director.

• Fred Jackman, Jr., "Rin-Tin-Tin," TV, (Screen Gems) with Lee Aaker and James Brown. Harry Gerstad, director.

• Burnett Guffey, ASC, "End As a Man," (Horizon-American Prod.) (Shooting in Florida) with Ben Gazzara. Jack Garfein, director.

WALT DISNEY

• Gordon Avil, ASC, "The Mickey Mouse Club," TV. Sid Miller, director.

• Walter Castle, ASC, "The Dairy Story," TV. William Becusline, director.

FLYING A

• Bill Bradford, ASC, "Buffalo Bill, Jr.," TV, with Dickey Jones and Pappy Cheshire. George Archinbaud and Frank MacDonald, directors; "Annie Oakley," TV, with Gale Davis. George Archibaud and Frank MacDonald, directors.

• Lester White, ASC, "How Christian Science Heals," TV (Cinefilm Inc.). Robert G. Walker, director.

JERRY FAIRBANKS STUDIO

• Jerry Fairbanks, "Once Upon a Honeymoon," TV, (American Tel. & Tel.). Gilbert Champion, director.

FOX WESTERN AVENUE STUDIOS

• Lloyd Ahern, ASC, "Window of the Sea," TV, (TCF TV) with Joan Fontaine and Michael Wilding. Lewis Allen, director.

• Karl Struss, ASC, "My Friend Flicka," TV, (TCF TV) with Gene Evans and Anita Louise. John English, director.

GENERAL SERVICE STUDIOS

• Ray Foster, ASC, Purex Commercial TV, (Mercury International). T. Gadden, director.

GOLDWYN STUDIOS

• Lee Garmes, ASC, "The Sharkfighters," (CinemaScope & Color) (Samuel Goldwyn Jr. Prods. UA release) (Shooting in Cuba) with Victor Mature and Karen Steele. Jerry Hopper, director.

• George Clemens, ASC, "Schlitz Playhouse of Stars,' TV, (Meridian Prods.). Various directors.

INDEPENDENTS

• Frank Planer, ASC, "The Pride and the Passion," (Technicolor; VistaVision) Stanley Kramer Prod. for UA; shooting in Spain) with Cary Grant and Frank Sinatra. Stanley Kramer, producer-director.

• George Robinson, ASC, "Dance With Me, Henry," (Bob Goldstein Prod. for UA) with Abbott and Costelllo. Charles Barton, director.

• Lee Garmes, ASC, "The Big Boodle (Lewis Blumberg Prod. for UA release; shooting in Cuba) with Errol Flynn and Rossana Rory. Richard Wilson, director.

• Harold Lipstein ASC, "Spring Reunion," (Bryna Prods. UA release) with Betty Hutton and Dana Andrews. Robert Pirosh, director.

• William Margulies, "Mark of the Apache," with Chuck Connors and Susan Cummings. Lesley Selander, director.

• Lucien Ballard, ASC, "The King and Four Queens," (Russ-Field Prods. for UA release) (Color; Cinemascope) (Shooting in Utah) with Clark Gable and Eleanor Parker. Raoul Walsh, director.

• James Wong Howe, ASC, "Drango," (Earlmar Prods. for UA release) with Jeff Chandler and Joanne Dru. Jules Bricken, director.

• Charles Straumer, "Badge of Marshal Brennan," (Albert C. Gannaway Prod.) with Carl Smith and Marty Robbins. Albert C. Gannaway, producer-director.

• Joseph Lashelle, ASC, "Love Story," (Bob Goldstein Prods. for UA release) with Barbara Stanwyck and Sterling Hayden. Gerd Oswald, director.

• Fred West, ASC, "The Flesh and the Spur," (Color) (Shooting at Valley Ranches) (Hy Prods. for American International release) with John Agar and Marla English. Edward L. Cahn, director.

• Wilfred M. Cline, ASC, "Hidden Fear," (Shooting in Copenhagen) (St. Aubrey-Cohn Prods. for United Artists release) with John Payne and Natalie Norwick. Andre De Toth, producer-director.

KTTV

• Stuart Thompson, ASC, "Lassie,' TV, (Robert Maxwell Prods.) with Jan Clayton and George Cleveland. Les Selander, director.

METRO-GOLDWYN-MAYER

• Robert Surtees, ASC, "Raintree County," (65mm and Color) with Montgomery Clift and Elizabeth Taylor. Edward Dmytryk, director.

• Russell Harlan, ASC, "Teahouse of the August Moon," (Color; CinemaScope) (shooting in Japan) with Marlon Brando and Glenn Ford. Daniel Mann, director.

• Fred A. Young, ASC, "The Barretts of Wimpole Street," (CinemaScope & Color) (shooting in England) with Jennifer Jones and Sir John Gielgud. Sidney Franklin, director.

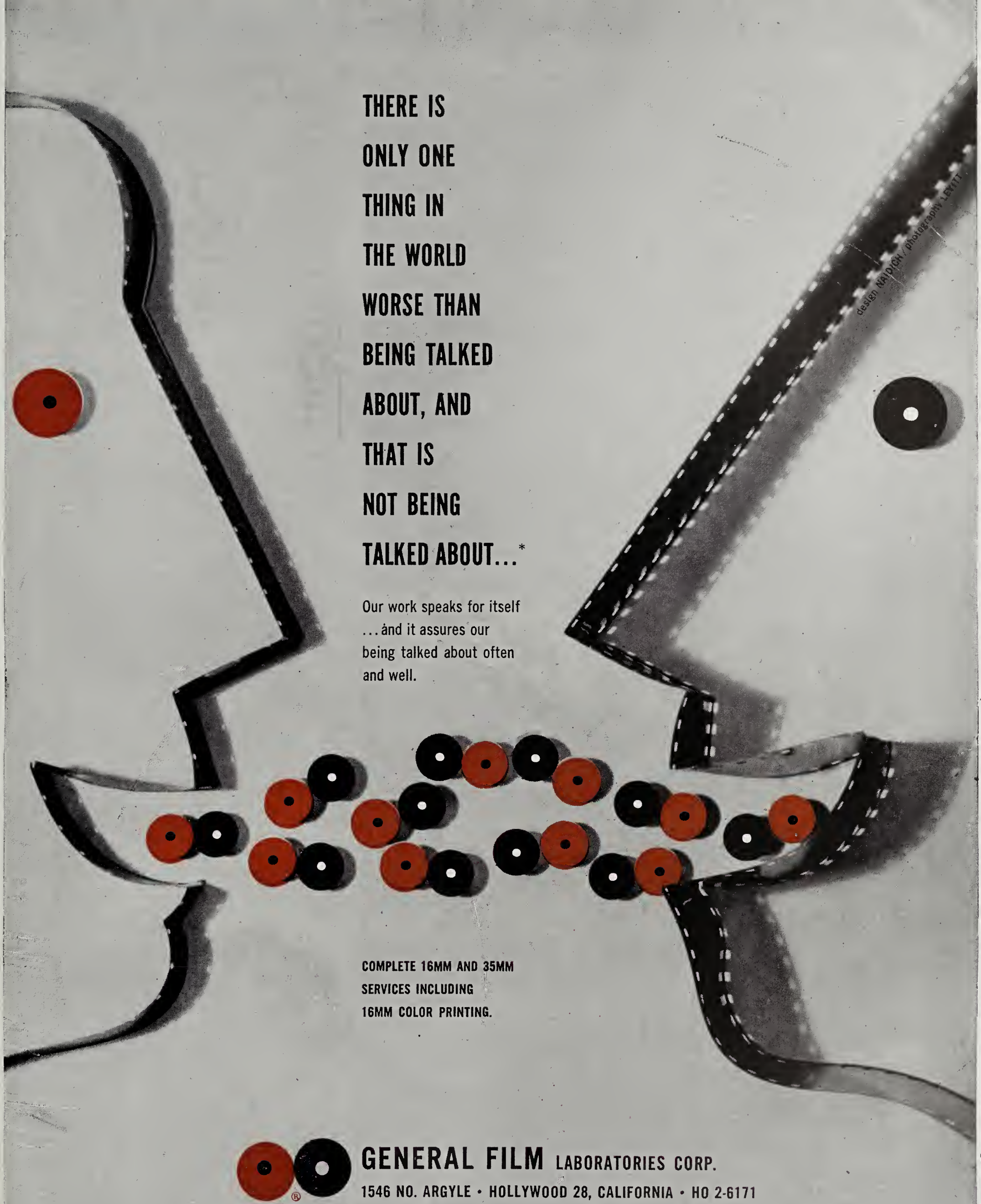
• Arthur E. Arling, ASC, "The Great American Pastime," with Tom Ewell and Anne Francis. Hermann Hoffmann, director.

MOTION PICTURE CENTER

• Nick Musuraca, ASC, "The Line Up," TV, (Desilu Prod.) with Warren Andersen. H. Morse, director.

• Robert De Grasse, ASC, "I Love Lucy," TV, (Desilu Prods.) with Lucille Ball and Desi Arnaz. James Kern, director.

(Continued on Page 441)



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BULLETIN BOARD

(*Continued from Page 396*)

Grief," based on a famous Jack London character. Producer is Duke Goldstone; director is Stuart Heisler.

• • •

Ray Fernstrom, ASC, and William Mellor, ASC, recently photographed sequences for a special 12-minute short subject, "The Miracle of Todd-AO," which demonstrates the audience-participation prowess of the Todd-AO wide film cameras. The Todd-AO company has long desired to show the industry and the public that its one-projector, widely-curved screen process is fully capable of all the thriller performances of other super-wide-screen processes. The film will be shown as a companion subject with all future screenings of "Oklahoma!"

• • •

The coming month will see six of MGM's directors of photography shooting pictures off the lot in distant locations: John Alton, "Teahouse of August

(*Continued on Page 446*)

AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 8, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture and TV film studios. Its membership also includes non-resident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

•

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THE WORLD'S MOST COMPLETE ASSORTMENT
OF PHOTOGRAPHIC EQUIPMENT FOR

T.V. and Motion Picture Studios



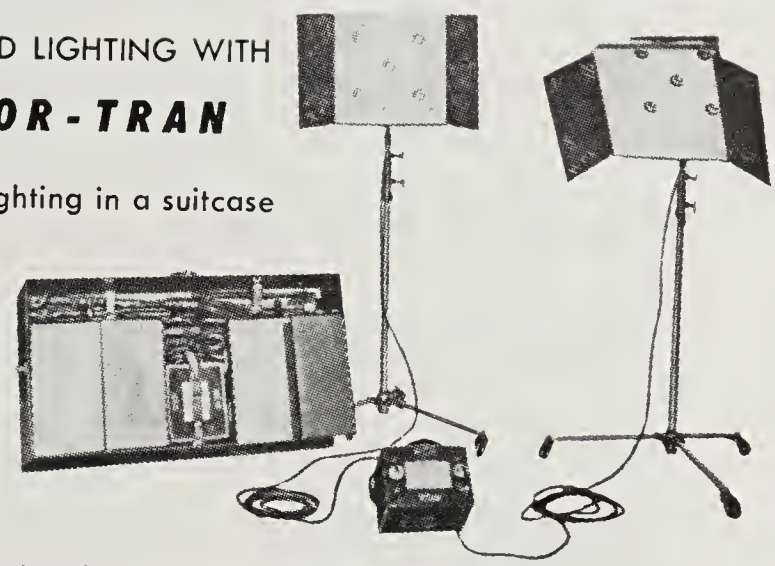
New **PROFESSIONAL JUNIOR**
Adjustable wood BABY TRIPOD
—for Prof. Jr. friction
and geared heads

Has substantial shoe and spur. Measures from floor to flange 25" extended —17" collapsed. **$75**

FAMOUS
"controlled
action"
SMALL **GYRO**
TRIPOD

Two speeds—slow and fast —for both panning and tilting. Helps you capture fine scenic views and fast-moving sports events. Especially recommended for 16mm Mitchell, 16mm Maurer, B & H Eyemo and similar cameras. **$600**

PACKAGED LIGHTING WITH
COLOR-TRAN
—studio lighting in a suitcase

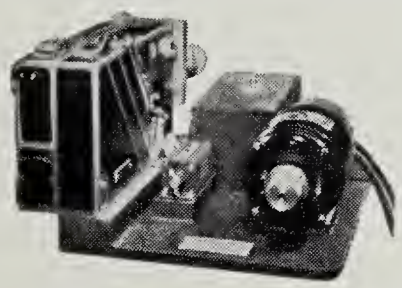


Imagine being able to use two 5000 watt units on a 30 amp. fuse — COLOR-TRAN will do it! Kit contains 2 light heads, 2 Superior stands and proper size COLOR-TRAN converter to match. Packed in compact case.

Senior Kit
$265.00

Other style kits available.

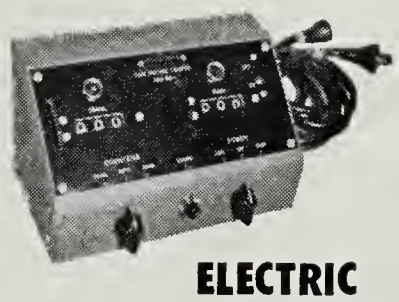
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STOP MOTION MOTOR
FOR CINE KODAK SPECIAL

Runs forward or reverse, 110 AC synchronous motor with frame counter. May be run continuously or for single frames. Camera mounts without special tools. **$550**

Also available — Stop Motion Motors for 16mm—35mm B & H, Mitchell and other professional cameras.

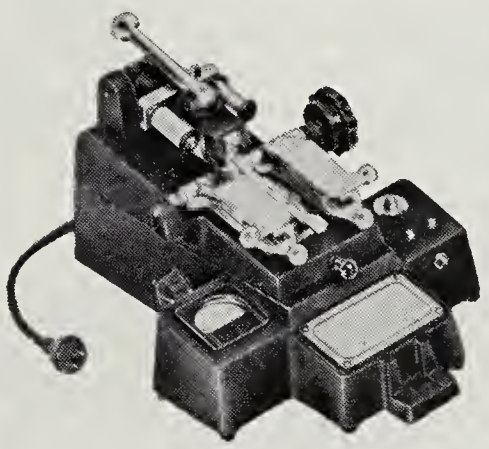


ELECTRIC FOOTAGE *TIMER*

Dual model for both 16mm and 35mm. Large white numerals on black background. Accurate reset dial. Switch controlled by operator, who selects either 16mm operating at 36 feet per minute—or 35mm operating at 90 feet per minute . . . or both in synchronization. **$95**

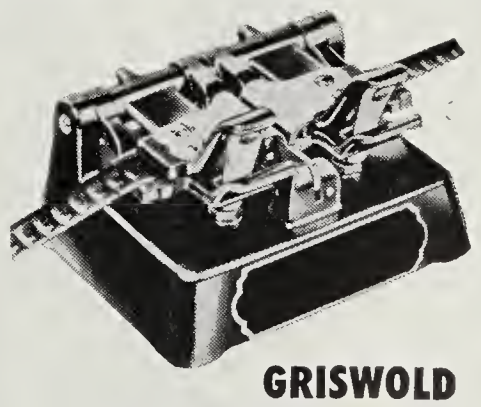
Single model, either 16mm or 35mm **$45**

presto-splicer
GIVES PERMANENT SPLICE
IN **10** SECONDS!



Especially good for splicing magnetic film. Butt Weld type for non-perforated or perforated film. 16mm, 35mm or 70mm. **$547.80**

16mm or 35mm models— for perforated film.



GRISWOLD
HOT FILM SPLICER

Model R-2 for 35mm silent and sound film. Precision construction makes it easy to get a clean, square splice with accurate hole spacing. Nothing to get out of order. **$65**

Also Bell & Howell 8mm, 16mm and 35mm Hot Splicers and B & H Laboratory model Foot Splicer.

*9.5mm Lenses in 16mm C mount. 18.5mm (extreme wide angle-flat field) Lenses available in mounts for all 35mm Motion Picture Cameras.
*PHOTO RESEARCH Color Temperature Meters. *Electric Footage Timers
*Neumade and Hollywood Film Company cutting room equipment.
*Griswold & B.&H. Hot Splicers. *DOLLIES—Bardwell-McAlister, Mole Richardson, Century and Colortran Lighting Equipment.

Complete line of 16mm and 35mm Cameras

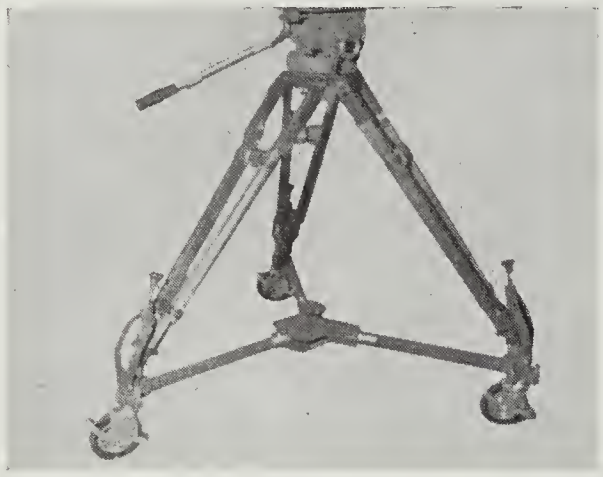
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6-1420

CINEKAD JUNIOR TRIPOD DOLLY

Used Nationally by Discriminating Cameramen



This 3-Wheel Collapsible Tripod Dolly Is . . .

especially designed ta meet the demand far convenient mability af cameras an lacation ar in the studia.

Dally can be used with any prafessianal or semi-pra tripad. The tripad is fastened firmly ta the dolly by a clamp at each leg tip. The special individual caster lacking system makes it passible ta lack either twa ar three wheels in a parallel pasition, enabling dally ta track in a straight line far ralling shats.

Dally falds quickly inta a single campact, easy-ta-carry unit, 23 inches in length, weighing 14 lbs.

Write for Prices and Literature

Cinekad ENGINEERING COMPANY

763 Tenth Avenue, New York, N.Y. • PLaza 7-3511

DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR MOTION PICTURES AND T.V.

HAVE YOU SOMETHING TO SELL TO PRODUCERS OF MOTION PICTURES?

This issue will be read in virtually every film production center in the United States and in over 70 foreign countries.

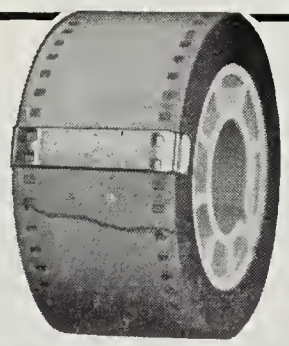
It will reach more studio cinematographers, TV film cameramen and producers, industrial film makers and advanced cine amateurs than any other technical publication in the motion picture field.

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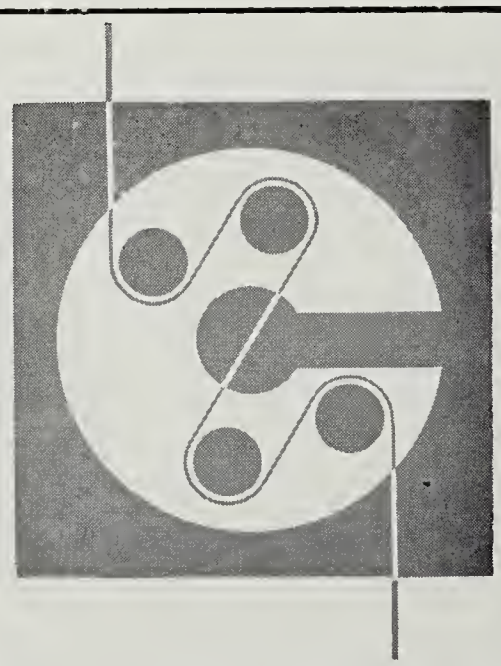
MERCER FILM PATCH

Descriptive Chart & Price List Mailed on Request

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GEO. W. COLBURN LABORATORY INC.

164 NORTH WACKER DRIVE • CHICAGO 6

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8 and 16mm SERVICES

Industry NEWS

John A. Pistor, Distribution manager of the Motion Picture Sales Dept. of Eastman Kodak Company, has joined in an executive capacity W. J. German, Inc., Hollywood, according to Edward Blackburn, Vice-president and General Manager.



John A. Pistar

Pistor, who formerly resided in Brighton, N. Y., joined Kodak in 1938. He served briefly in the Physics Division of Kodak's research laboratories and with the Quality Control group in the Finished Film Department at Kodak Park Works. He joined the company's motion picture film sales department at Kodak in 1946 where he has handled the scheduling and distribution of all Eastman professional motion picture films.

He is a member of the PSA and the SMPTE.

• • •

Demonstrations of the new Edimac "4-in-1" film editing machine in a number of eastern film production centers has been announced by J. G. McAlister Inc., Hollywood, Calif.

Mr. Irving Yates, sales manager for McAlister, will meet with film producers and TV executives from August 19 to October in the following cities:

Oxford Mississippi (University Motion Picture Association Conclave)	Aug. 19-25
Chicago	Sep. 4-7
Detroit	Sep. 10-13
Cleveland	Sep. 14-15
Dayton, O.	Sep. 17-20
Washington D. C.	Sep. 24-30
New York	Oct. 1-7

Appointment information may be had by writing J. G. McAlister Inc., 1117 No. McCadden Pl., Hollywood 38, Calif.

• • •

High-speed Anscochrome 16mm color motion picture film is now being sold without the cost of processing included in the purchase of the film. According to Ansco, move is result of demand from government and industrial users as well as television and newsreel companies.

Availability of the film without requirements for factory processing makes it possible for users engaged in confidential work to maintain full security

(*Continued on Page 412*)

BROOKS CAMERAS

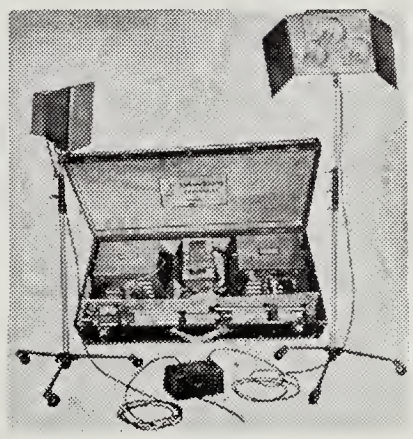
The House of Famous Brand Names

Prices subject to change without notice

NEW ARRIFLEX 16



The only 16mm camera providing through-the-lens focusing and viewing during exposure, electric motor drive. Matte box, cables **$1725.00**
16mm Xenon f/1.9 lens **$170.00**
25mm Xenon f/1.5 lens **$170.00**
75mm Xenon f/2 lens **$200.00**
Zoomar lens 1" to 3" f/2.8 for Arriflex . . **$579.00**
Arriflex, Model 16 Tripod **$175.00**

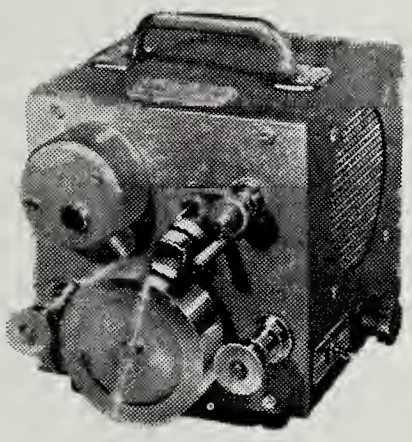


COLORTRAN JUNIOR KIT

Here, in one handy package, you have the equivalent illumination of 3000 watts of current from a 15 ampere fuse! Compact kit fits any car, contains everything you'll need for perfect lighting . . . a studio in a suitcase! Includes 2 Groverlite heads with 8 foot aluminum stands. All units have barn doors and diffusion slots for light control **$198.50**

SENIOR KIT—produces equivalent of 5000 watts illumination from a 30 amphere fuse **$265.00**

SPOT KIT—Contains 3 spotlights with a Broad or Junior, plus 4 stands. Snoots and diffusion for spots . . **$313.25**



PRECISION SOUND READERS

Made by Precision Laboratories . . . your guarantee of the finest in sound editing instruments. Simple threading . . . polished stabilizer drum with needle bearings, with a surface which cannot damage film. Film rollers machined to conform with SMPTE standards, and equipped with oilless bearings . . . precision ground shafts . . . dimensions 6" x 6" x 7½."

Amplifier: 117 volts — 60 cycle — AC. Power output — 4 watts. Heavy duty Alnico V speaker . . . safety fused . . . prefocused socket . . . pilot light . . . 6 ft. heavy duty cord.

Optical Model 600 — 16mm and 35mm . . **$185.00**

Magnetic Model 700 — 16mm, 17.5 mm, 35 mm and ¼ inch **$198.00**

Optical-Magnetic Model 800 — 16mm, 35mm and ¼ inch **$259.50**

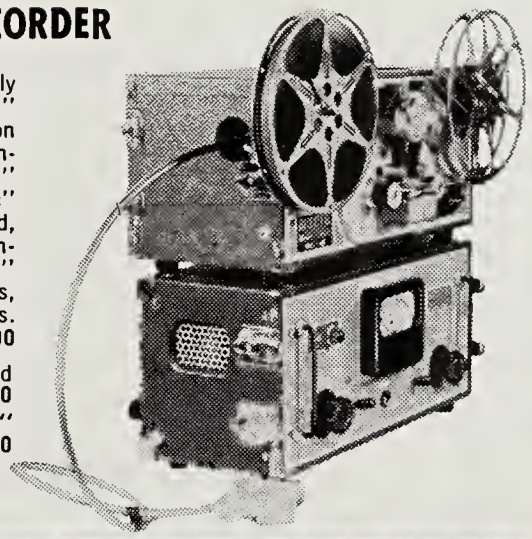
West's Largest Selection
Budget Terms Available

MAGNASYNC X-400 RECORDER

A complete sound system that weighs only 27 lbs! Features high gain-"long-shot" microphone channel. Dialog equalization for "speech-music" selection. Self-contained playback system for "film-direct" monitor. Famous Magnasync "synkinetic" precision film transport. High speed rewind, sync speed reverse and fast forward. Convenient arrangement for "sync marking." Footage counter, extended capacity arms, "quick-detach" mount for special motors. Unconditionally guaranteed! . . **$895.00**

Magnasync M-8 speaker, amplifier, and accessory case **$97.50**

4-position mixer, high level mixing w/4½" Vumeter mounted in case . . . **$375.00**





16mm
CINE-VOICE

AURICON CINE-VOICE

popular-priced 16mm camera that photographs a sound track, perfectly lip synchronized with the picture — to be played on any 16mm sound projecter. Single-lens model.
New **$695.00**
Used **$495.00**
Turret model for 3 lenses **$784.50**

AURICON PRO-600

16mm optical-sound-on-film; self-blimped; sync motor drive for single or double-system recording; Electromatic take-up, film-flow without friction clutches or belts. Various combinations of accessories available. **$1165.00**

AURICON "SUPER-1200"

16mm sound-on-film camera (self-blimped) with 3-lens turret for "C" mount lenses. 1200 ft. capacity for 33 minutes recording time. **$3319.25**



SUPER
1200

AURICON PAN-TILT professional tripod, wgt. 27 lbs. **$325.00**

AURICON PRO-200. Was $1,495.00 — Now — Used **$995.00**

Write In For A Complete List Of Professional Equipment

BROOKS CAMERAS

45 KEARNY AT MAIDEN LANE • EXBROOK 2-7348 • SAN FRANCISCO 8, CALIFORNIA



The Magazine that's read wherever movies are made!

AMERICAN

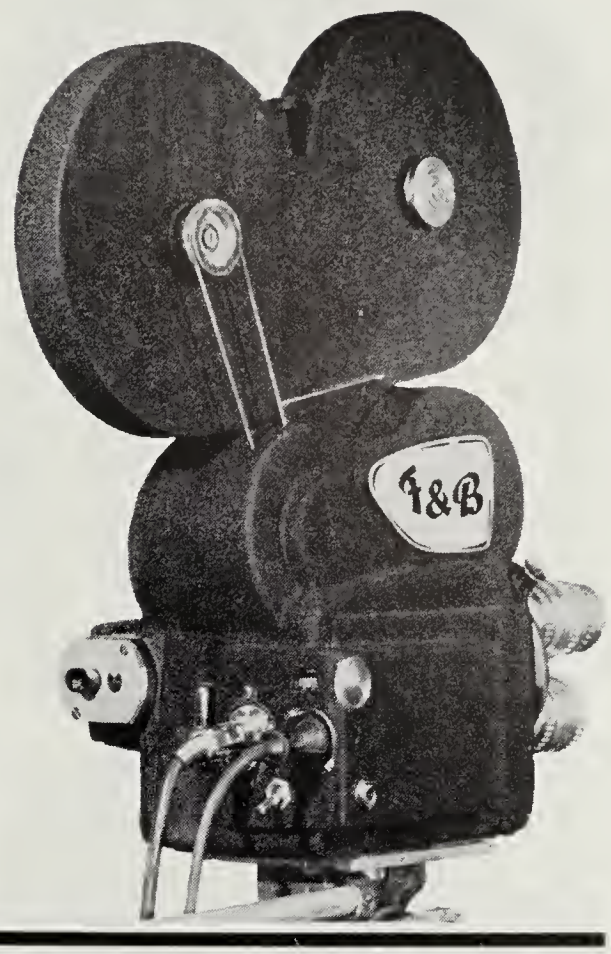
Cinematographer

American Cinematographer has consistently surpassed all other publications in the amount of advertising carried on film production equipment and services. Advertisers — large and small — know from experience that American Cinematographer produces the best results— gives the most returns per advertising dollar.

NEW F&B "CINEVOICE 400"

F&B's new Cinevoice CONVERSION for 400 ft. magazines . . .

DOES NOT cut down your camera . . .
DOES NOT require an auxiliary motor . . .
CAN STILL be used as the original 100 ft. camera when necessary.



A special needle-bearing take-up system and ball-bearing magazine shafts make possible the superbly smooth, steady and jam-free operation. Either Mitchell or Bell & Howell 400 ft. magazines may be used on F&B conversion; and, in 10 seconds, the magazine can be removed, the light trap closed, and the Cinevoice is ready for operation as a 100 ft. camera again.

PLUS . . . ALL THESE BUILT-IN FEATURES

1. SILENCED VEEDER footage counter.
2. Built-in behind the lens filter slot, with two filter holders.
3. Headphone jack built in camera.
4. Cannon plugs for all sound sockets.
5. Tripod socket rebushed with brass insert.
6. New neon signal light.

PLUS . . . COMPLETE REFINISHING . . .

Your Cinevoice camera and 400 ft. magazine completely overhauled, cleaned up and re-finished in beautiful, professional black crackle finish.

YET . . . F&B "CINEVOICE 400" IS THE LOWEST PRICED CONVERSION AVAILABLE . . .

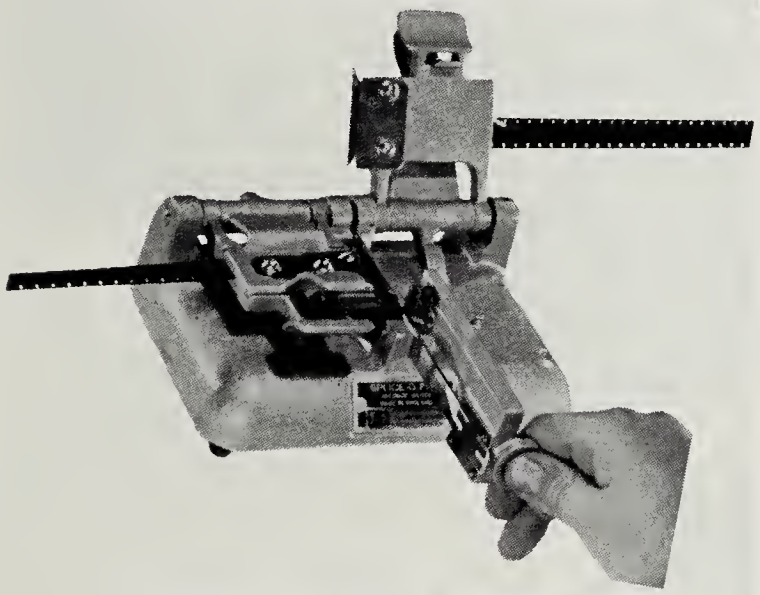
For Complete new outfits . . .
Turret Cinevoice plus F&B conversion and 400 ft. B&H magazine.....1200.00

PRICE ONLY $345.00
not including magazine.

AUTOMATIC SPLICER

SPLICE-O-FILM

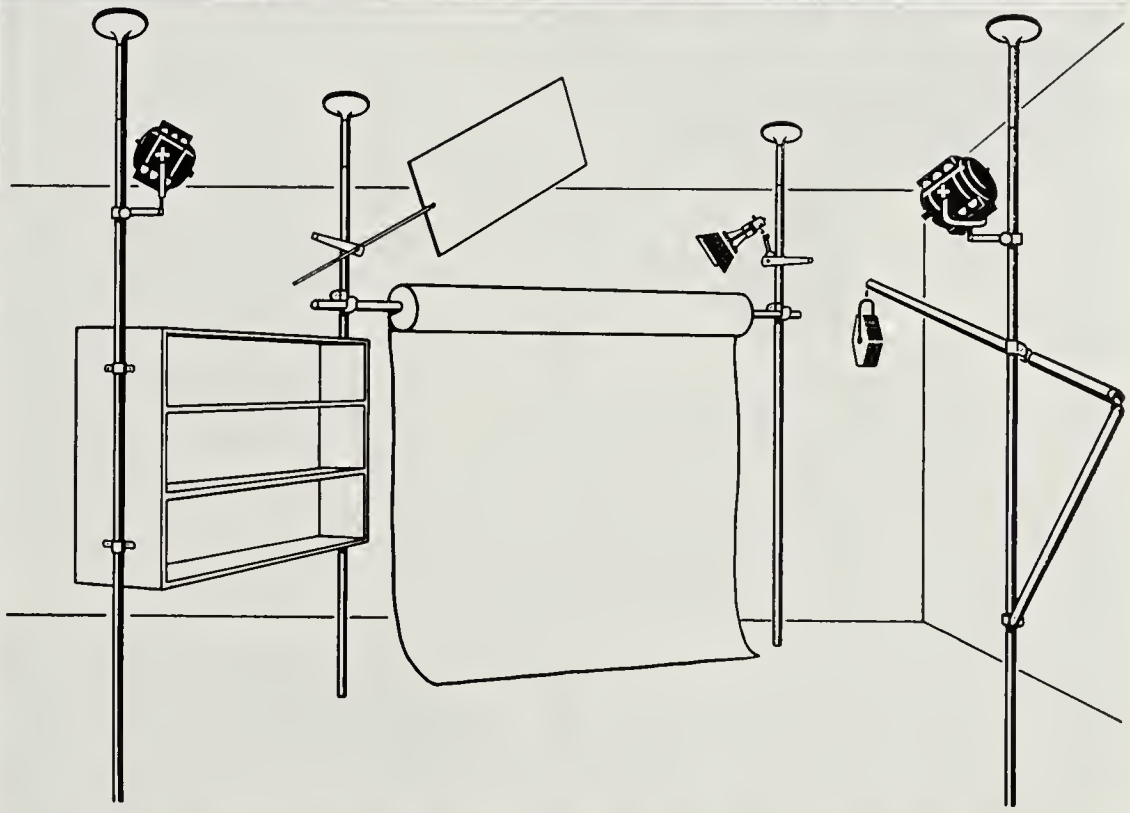
for 8mm-16mm combination & 35mm with the Exclusive PRESET SCRAPER!



A PERFECT SPLICE EVERY TIME AUTOMATICALLY!

The major cause of film failures is poor splicing . . . and the major cause of poor splicing is improper scraping (either too much or too little). SPLICE-O-FILM solves both of these problems with its automatic scraper that takes off exactly the right depth of emulsion every time . . . regardless of applied pressure. SPLICE-O-FILM is a precision tool . . . imported from England. It has a precision-ground, tungsten steel scraper that is preset and ready for making thousands of splices.

BROCHURE ON REQUEST



A NEW WAY TO HOLD THINGS UP . . . ANYWHERE . . .
LIGHTS - PROPS - BACKGROUNDS - MIKES
Without Nails or Screws - With

POLECAT



Adjust - push up - it's done

POLECAT is a featherweight, telescoping column of 1½ inch onodized aluminum with an expansion spring in the top. Adjust it once to your ceiling height with locking collar. Then just spring it in and out of place as you please. Rubber pads top and bottom protect ceilings and floors. *POLECAT can't be knocked over . . . and takes less floor space than a silver dollar.*

HOLDS 400 POUNDS. Makes a perfect, mobile, lightweight for lights. Two POLECATS with cross piece and fitting can be used to hold a roll of background paper, props, flats, etc. Perfect for location filming.

BROCHURE ON REQUEST

AVAILABLE NOW AT F&B

MILLER **Fluid Action** TRIPOD HEAD

Complete control for smoother panning in both horizontal and vertical positions . . . Full 360° horizontal movement. Fits F&B PRO-CINE TRIPOD.

ADAPTER PLATE $15.00 PRICE $113.50

F&B

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Phone: Murray Hill 2-2928

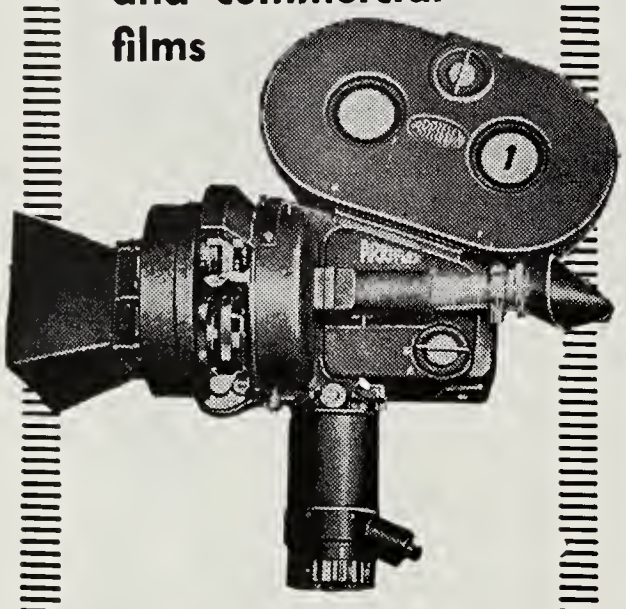
Cable Address — FLORBABB, N. Y.

ARRIFLEX

New 35 mm Model 2A
With 180° Shutter

A TRULY GREAT CAMERA

for TV, Newsreel and commercial films



For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200′ or 400′ magazine. Write for free folder.

Blimp now available.
16mm ARRIFLEX also available.

FRANK C. ZUCKER
CAMERA EQUIPMENT CO.
315 West 43rd Street, New York 36, N. Y.

WHAT'S NEW

. . . in equipment, accessories, service



Car-top Platform

Carter Manufacturing Co., 1235 S. E. Division St., Portland 2, Oregon, announces a full-length car-top platform for photographers that provides ample support for two men and equipment. Sixteen patented CarPac rubber support cushions carry the weight, and will not mark or stain car finish.

All models are shipped factory-assembled for assurance of finest workmanship. Complete installation time—10 to 15 minutes. Ladder and catwalk fold up for carrying in transit or may be left in place. Special stainless steel straps hold ladder to bumper.

Price with ladder and catwalk as shown in photo, $225.00.



DuPont Film Re-packed

Packaging changes providing ready distinction between Type 930A and Type 931A 16mm motion picture films have been announced by DuPont. The box for Type 930A Rapid Reversal Pan, used mainly for daylight work, has a red background, whereas the container for Type 931A High Speed Rapid Reversal Pan, used mainly for night-time pictures, now has a predominantly black background. Chances of a cameraman inadvertently using the wrong film is thereby lessened. The re-designed boxes are being used for 100-ft. and 200-ft. subdued-light-loading 16 mm rolls.

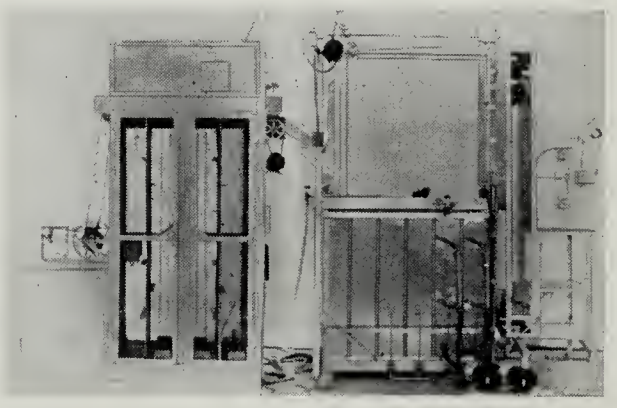


New Cine Camera

Bell & Howell Co., Chicago, announces a new 16mm cine camera featuring the Sunomatic lens, which is set by dialing a printed description of the outdoor light. Lens provides over 50% more picture area and greater depth of field than the standard 1″ lenses.

Custom Processors

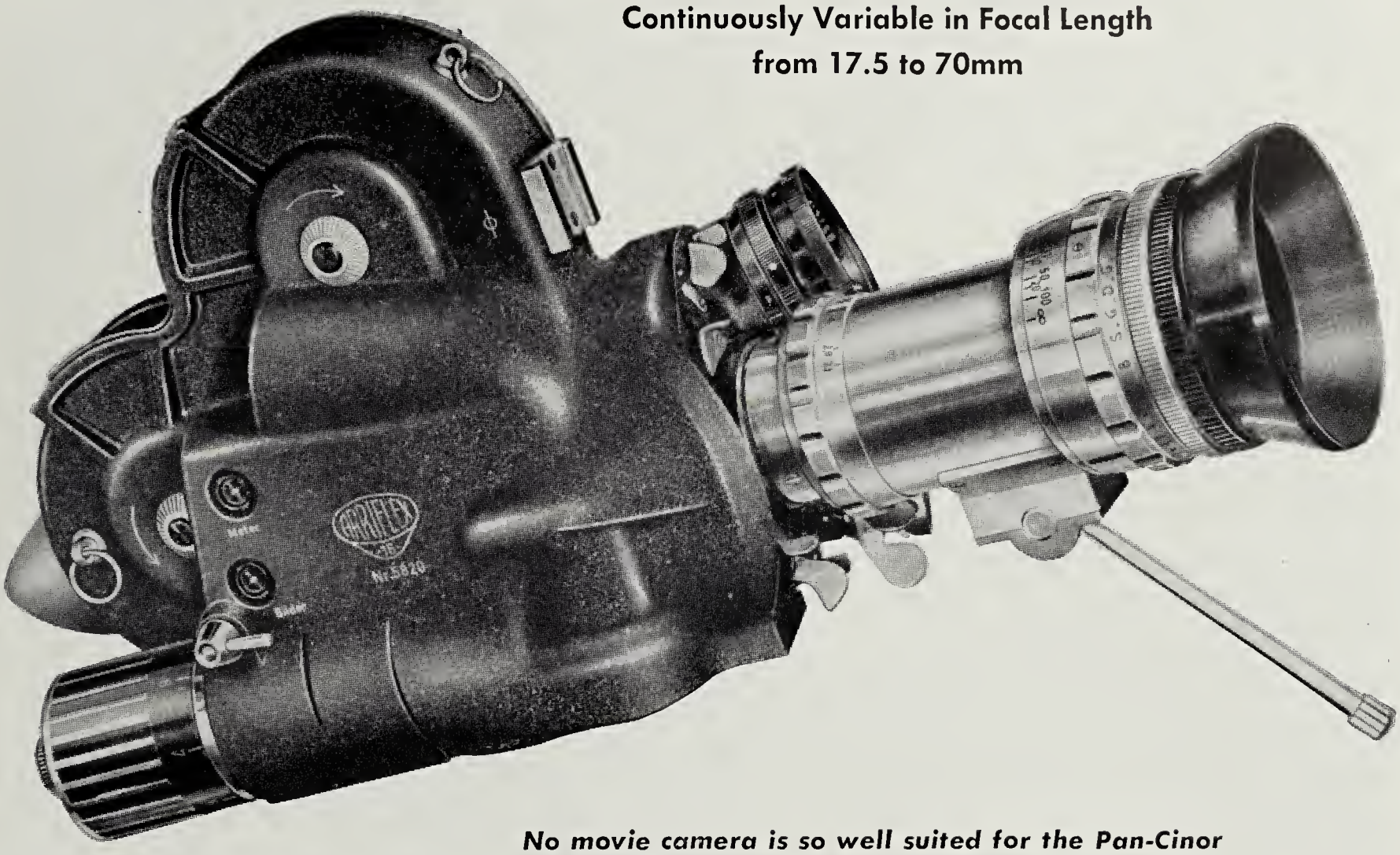
Metal Masters, 4584 68th St., San Diego, Calif., has stepped up its facilities for the manufacture of custom designed film processing machinery. Pictured below is equipment recently completed for Orlando Air Force Base. Outfit comprises two Metal Master basic B&W processors, which accommodates either 16mm or 35mm film at 50-ft. per minute. Descriptive literature is available.



NEW ARRI PAN-CINOR 'ZOOM' LENS

for the ARRIFLEX 16®

Continuously Variable in Focal Length
from 17.5 to 70mm



***No movie camera is so well suited for the Pan-Cinor Varifocal Lens as the* ARRIFLEX 16.**

By simply moving a lever, you can vary the focal length of this lens from wide angle to telephoto — and back — smoothly. You observe the results while actually shooting, as you view the image through the Arri Pan-Cinor lens in the Mirror Reflex viewing system of the Arriflex. No external finder is needed.

Other lenses need not be removed, because the divergent lens turret of the Arriflex 16 permits two other lenses to be used without optical or physical interference.

It is easy to follow moving subjects and it saves expensive "dolly" shots as the camera can remain in one position and a dolly effect obtained by varying the focal length of the lens.

SPECIFICATIONS

Varifocal Range	17.5mm to 70mm
Aperture Range	f:2.4 to f:22
Focusing Range	6½ feet to Infinity

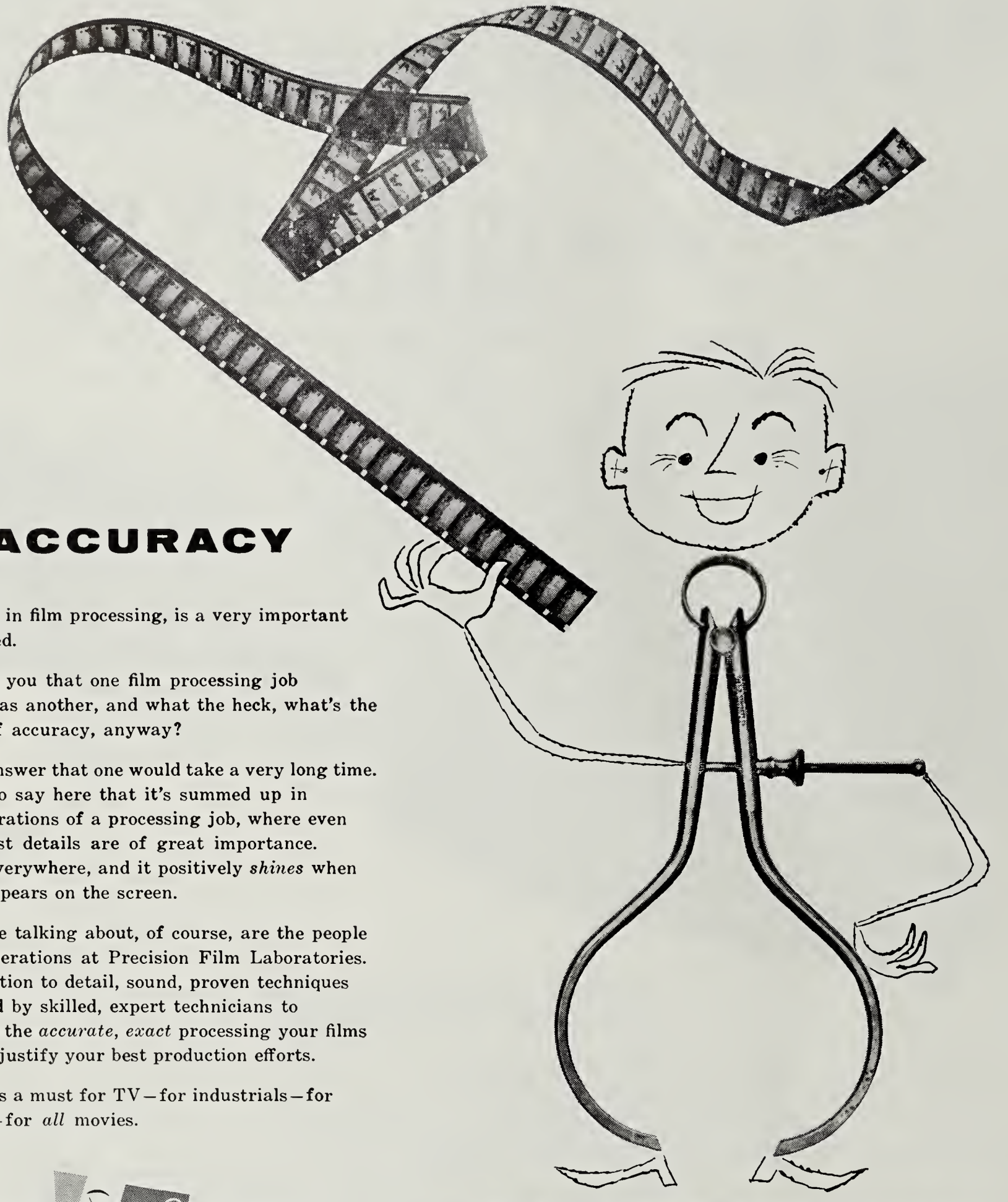
Built-in Lens Hood/Filter Holder for Series VIII Accessories

$399.75

Note: The Arri Pan-Cinor is not interchangeable with the standard model, nor can the standard model be converted for use with the Arriflex.

KLING PHOTO CORP.

257 Fourth Avenue, New York 10, N.Y.
7303 Melrose Avenue, Hollywood 46, Cal.



ACCURACY

This word, in film processing, is a very important word indeed.

People tell you that one film processing job is as good as another, and what the heck, what's the measure of accuracy, anyway?

Well. To answer that one would take a very long time. Suffice it to say here that it's summed up in *all* the operations of a processing job, where even the smallest details are of great importance. It shows everywhere, and it positively *shines* when the film appears on the screen.

What we're talking about, of course, are the people and the operations at Precision Film Laboratories. Here attention to detail, sound, proven techniques are applied by skilled, expert technicians to assure you the *accurate, exact* processing your films deserve to justify your best production efforts.

Accuracy is a must for TV—for industrials—for education—for *all* movies.

you'll see  **and hear**

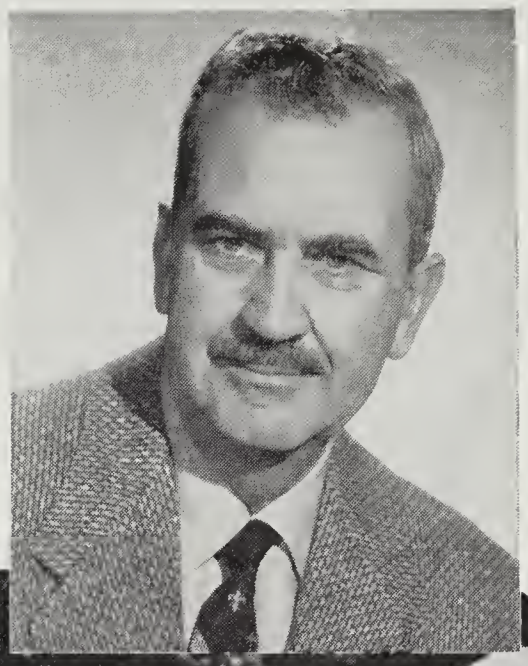
PRECISION

FILM LABORATORIES, INC.
21 West 46th Street, New York 36, New York

A DIVISION OF J. A. MAURER, INC.

In everything, there is one best . . . in film processing, it's Precision

Burnett Guffey, ASC

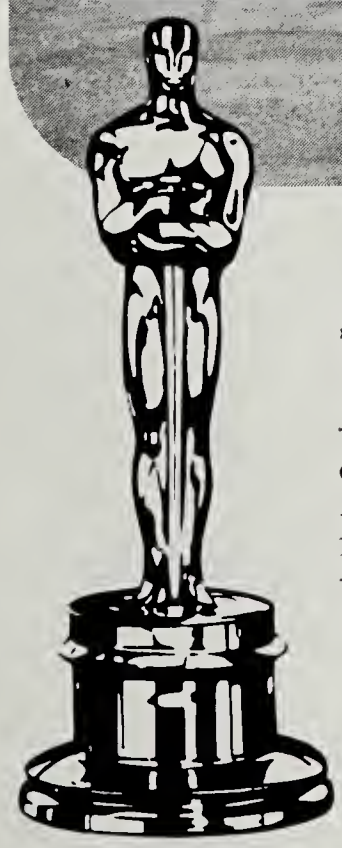


the lens

Bausch & Lomb Baltar . . .
the professional standard







the result

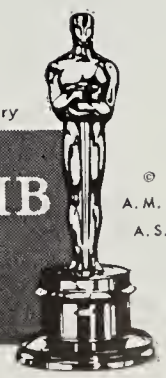
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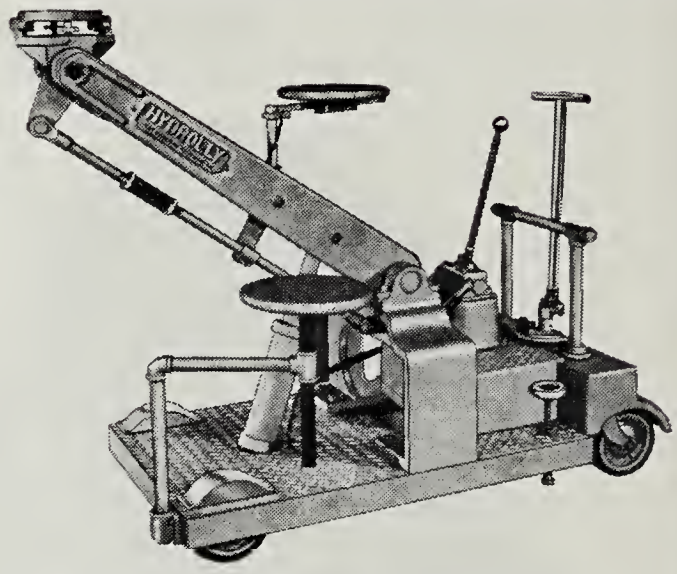
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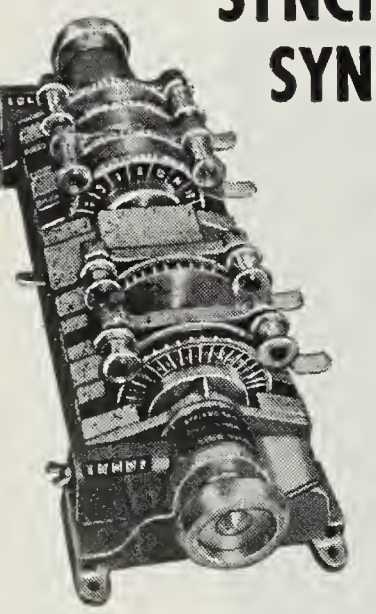
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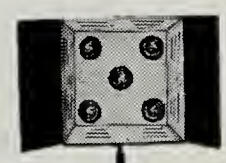


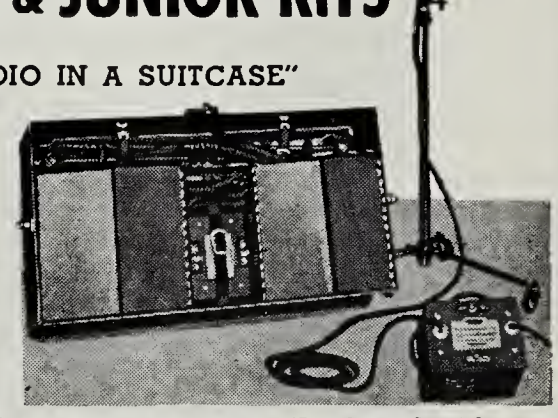
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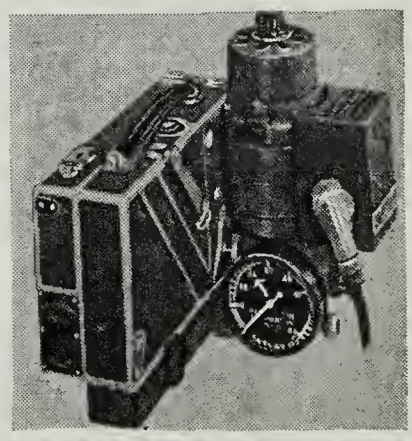
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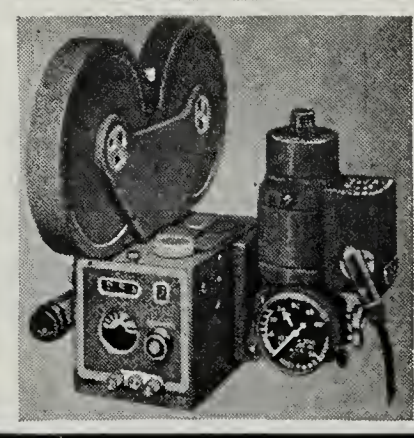
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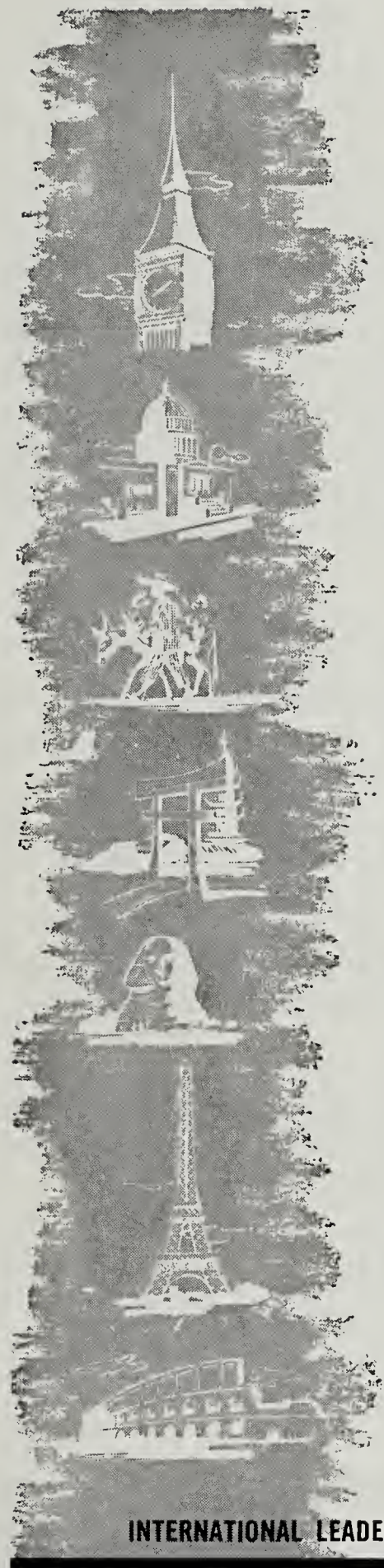




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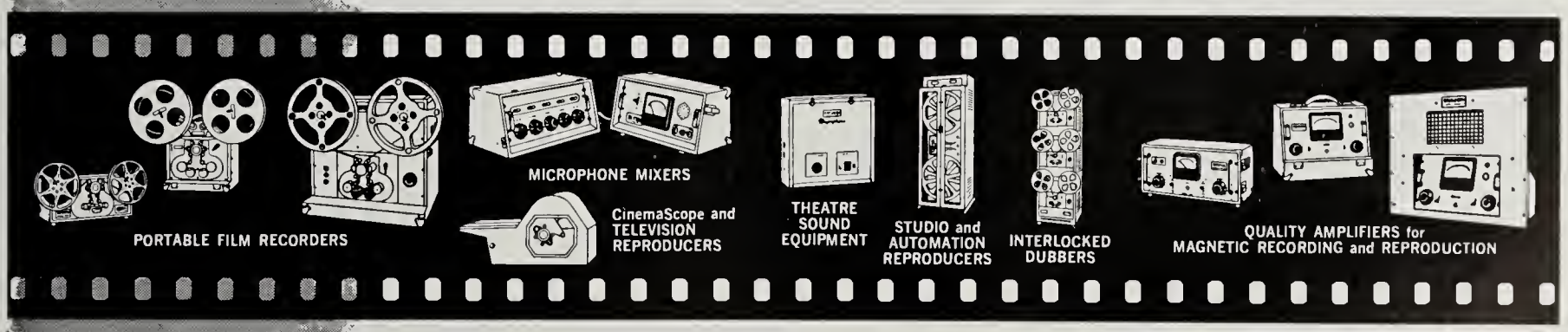
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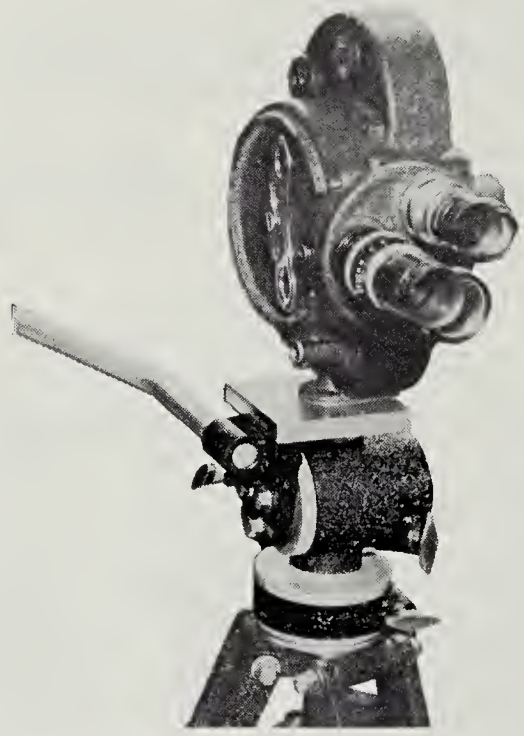
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INDUSTRY NEWS

(Continued from Page 402)

by handling processing through their own selected local laboratories. Others may still have processing done by Ansco at Binghampton, New York.

Ansco laboratories will process the film for either of two standard speeds: Exposure Index 32 or Exposure Index 125. The higher speed is expected to be popular with cinematographers who are required to make color movies of news and sports events under difficult linghting conditions. The higher speed will also be of great value to industrial film makers who must often make exposures on location where lighting is poor or where the extreme speed of a particular operation requires higher than normal frame speeds.

Anscochrome 16mm film is available in both daylight and tungsten (3400K) types at photo supply stores in 100 ft. daylight-loading spools for standard motion picture cameras and with special perforations for use in Fastax and other high-speed cameras. Retail price of film is $7.80 per 100-ft. roll.

The additional charge for processing by Ansco's laboratories is .0490 cents per foot, with a minimum processing charge of $4.90 per order.

• • •

Magnasync's annual "Sound Safari" leaves North Hollywood on August 1st with Sales Manager Howard Auchester at the helm.

Safari, initiated by Magnasync president D. J. White three years ago, has become a regular yearly promotion with the latest company sound equipment carried by air-conditioned station wagon throughout the country.

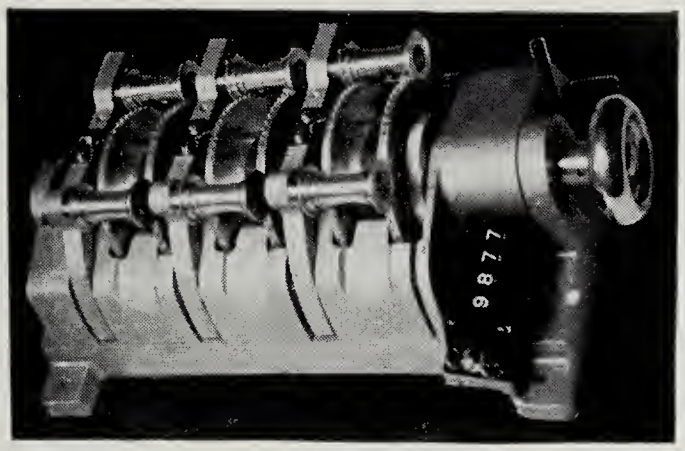
Purpose is to let film producers and others see and hear the company's



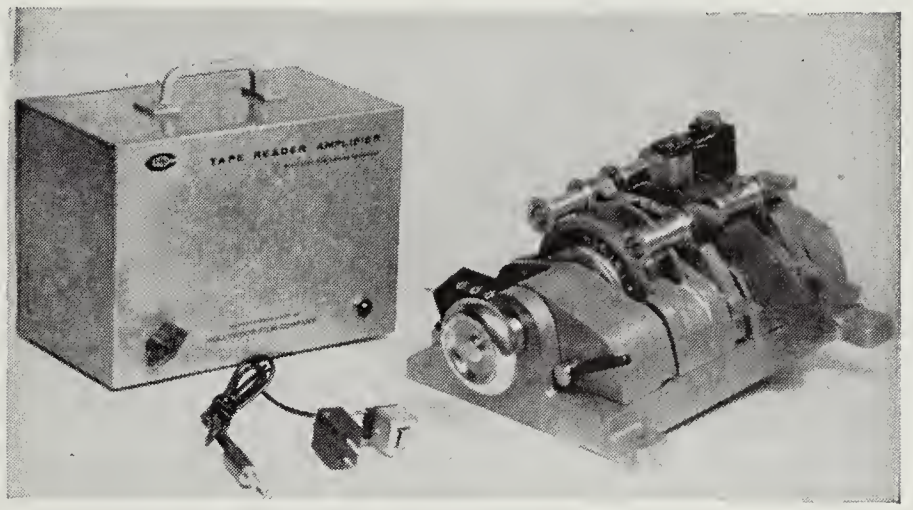
latest Magnasync equipment in their own studios, under actual operating conditions. Feature attraction this year is "sneak preview" of the company's new "Mark X" recorder, which will be formerly announced in the September issue of *American Cinematographer.*

SYNCHRONIZER HEAVEN





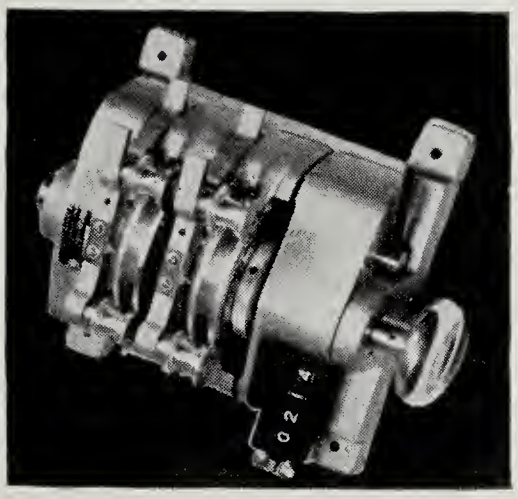
35mm 3-Way Synchronizer **$165.00**



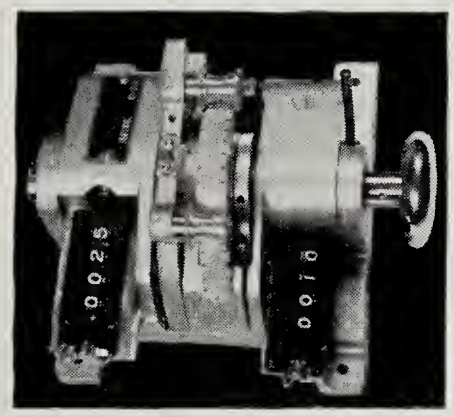
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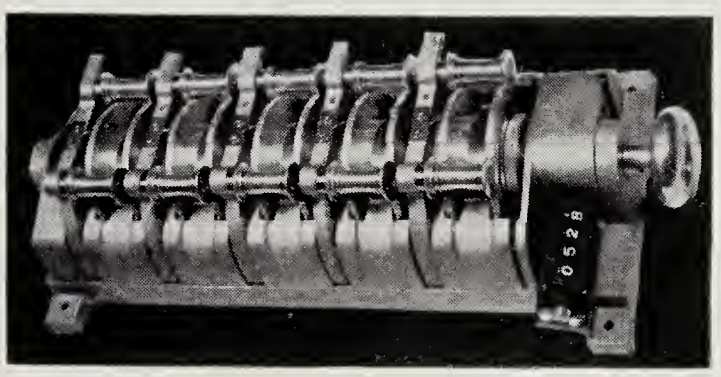
HFC Magnetic Tape Reader Synchronizer attachment	$34.50
HFC Magnetic Tape Reader Amplifier	55.00
Complete Unit	89.50



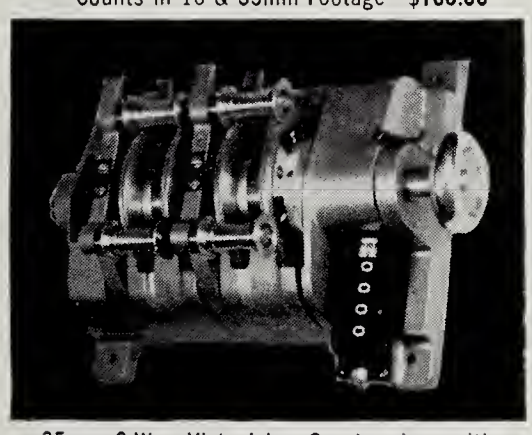
16mm 2-Way Synchronizer **$125.00**



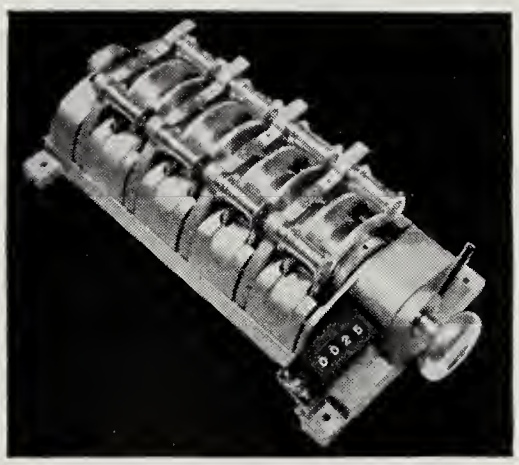
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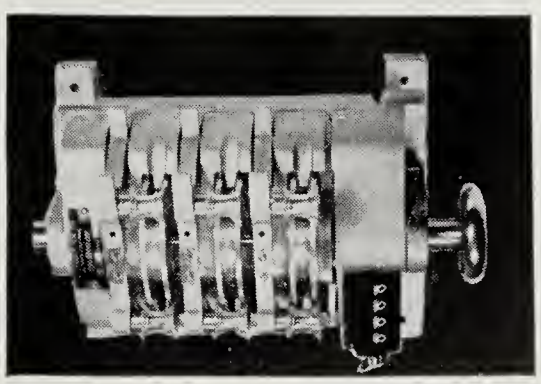
35mm 5-Way Synchronizer **$225.00**



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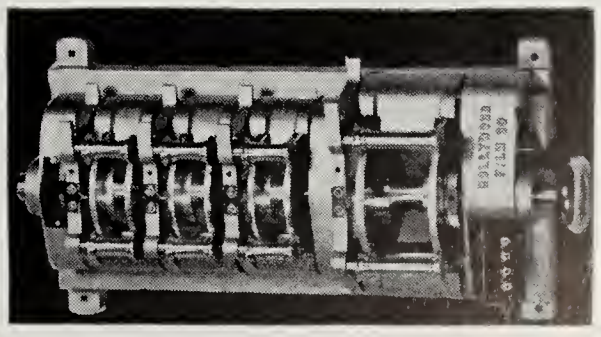
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Winton Hoch, A.S.C.

Sub-zero Camera Operation

A pre-production test to insure acceptable camera operation in filming scenes for "The Searchers" at below-zero temperatures.

By WINTON HOCH, A.S.C.

Director of Photography, C. V. Whitney Pictures, Inc.

C. V. WHITNEY PICTURES wanted honesty and realism in its productions. The company did not intend to fool around with any artificial atmosphere if it could be avoided. "The Searchers" called for scenes with snow and ice, so we looked for the coldest spot we could find in the United States that would be sure to have snow and still be reasonably accessible. The spot finally chosen was Gunnison, Colorado, and the pre-production survey party encountered temperatures lower than thirty degrees below zero!

The picture was to be photographed in VistaVision using the newly converted Technicolor cameras. Cold weather tests were essential. We needed to know at what temperatures camera heaters were needed; how and where to apply the heat — and how much. In addition we needed to check for any possible focus changes that might occur, check the battery performance with the given equipment under these conditions, ascertain the film gamma loss and determine any desirable exposure corrections at low temperatures. The extent of these latter factors could be estimated, of course, but an opportunity to check them first-hand is always welcome.

The Technicolor camera department was most co-operative, and anticipating the amount of heating needed, installed heating elements in the base of the camera, in the camera plate adapter and in a special heating blanket.

Non-technical members of this industry may find it interesting to note the great amount of careful, detailed work involved in this comparatively simple test. The resultant H & D curves and the log data are submitted in Figs. 2, 3, and 4.

A careful search for an available and suitable "cold room" was rewarded with the discovery of a most complete test facility in Westwood, near Hollywood, for the thorough testing of aircraft equipment at all temperatures, altitudes and humidities.

A test procedure was drawn up to facilitate the testing progress, equipment and warm clothing were assembled, and we descended on the test facility.

Camera personnel also present included Gene Polito, George Dye, and Elmer Fabion. Representing Technicolor were Fred Detmers, "Jake" Jacobs, Frank Schreiner and "I" Islin.

The camera was first set up in the controlled chamber (Fig. 1) at the existing temperature (approx. 80° F.) and the several copper-constantine thermocouples were installed as follows:

The motor thermocouple was fastened to the top of the rear endbell.

The lens thermocouple was fastened to the face of the camera box near the lens.

The battery thermocouples were put inside the battery lids.

The camera thermocouple was fastened to the rack-over support pedestal at approximately the center of the camera box *inside* the camera.

The chamber thermocouple was hanging in the air of the cold chamber near the camera.

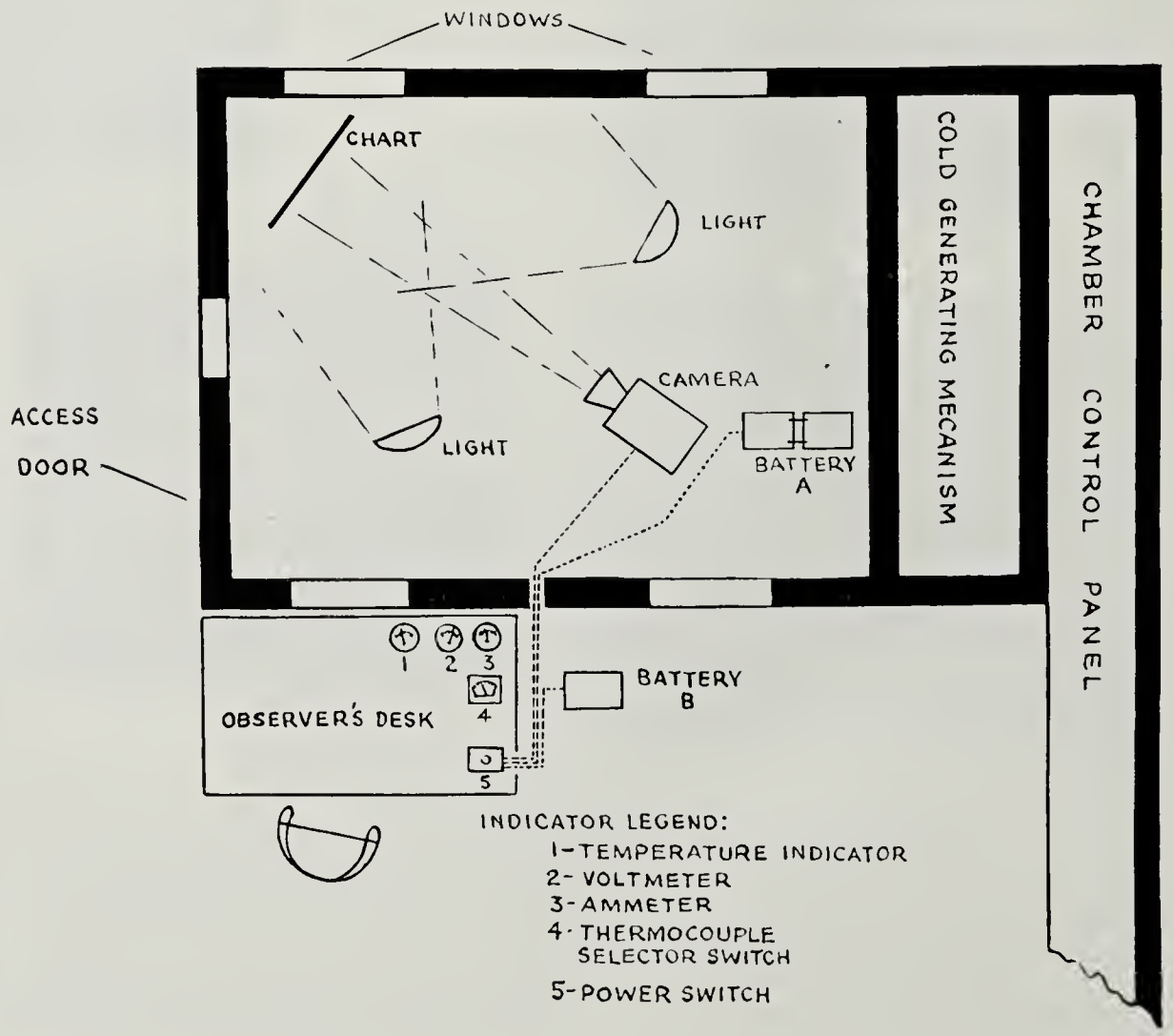
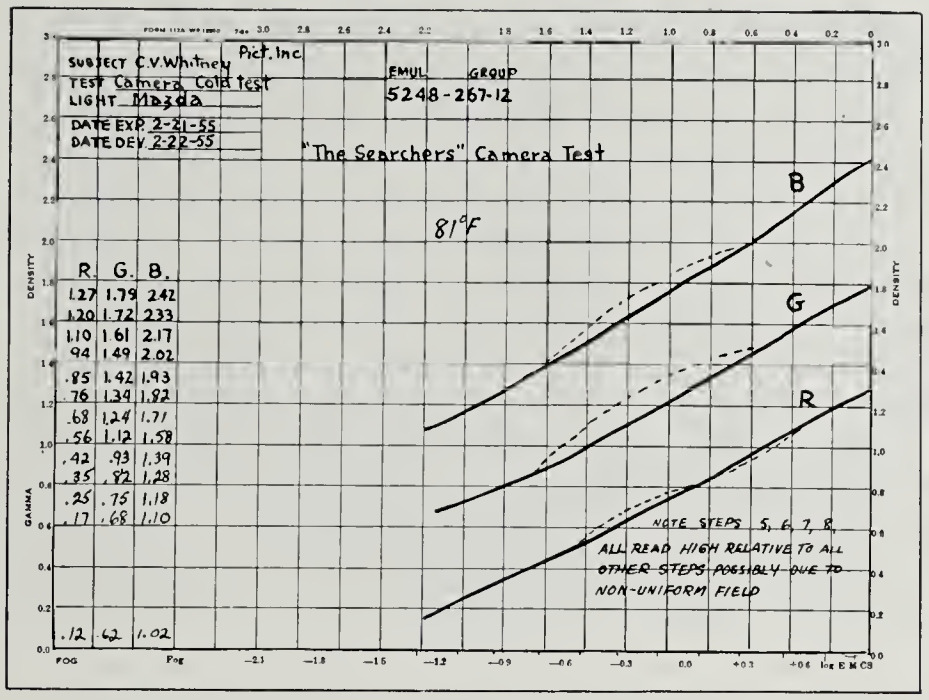
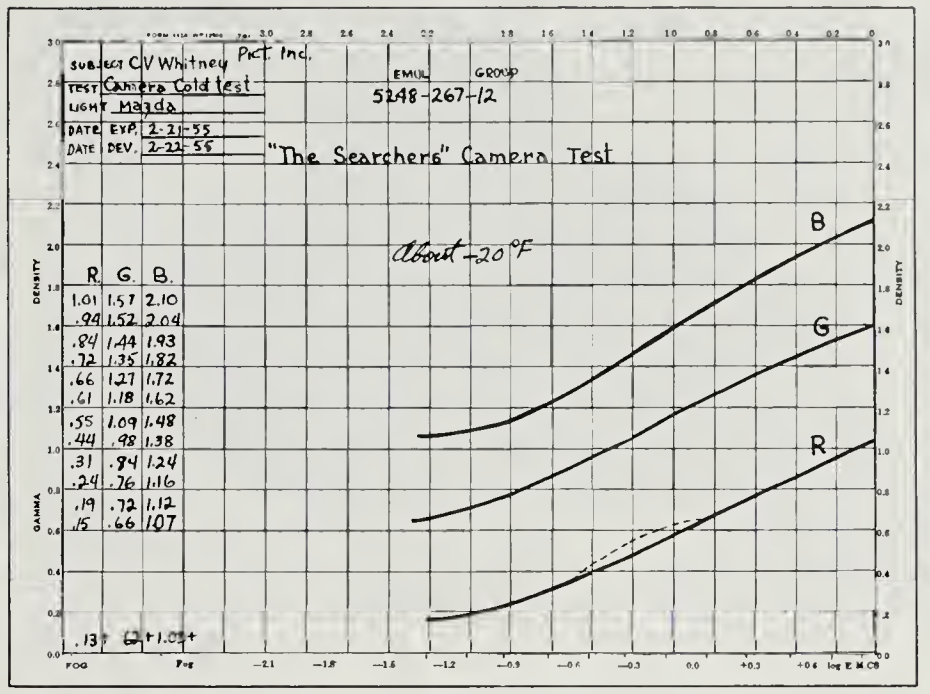


FIG. 1—Diagram of cold room where camera tests described by author were carried out. Camera performance was tested under temperatures ranging down to 44° below Zero.





FIGS 2 and 3—Charts show H&D curves for negatives exposed in cold chamber at 81° F. and —20° F. during camera tests made prior to production of "The Searchers." Above figures indicate approximate temperatures of the negatives at time of exposure.

Two camera batteries were connected in parallel and an extension cord carried to a selector switch outside the cold chamber so that an outside battery might be used if the cold ones lost too much power.

With all circuits checked, the crew proceeded to shoot a focus test and an H & D test at normal room temperature (81° F). Power drawn was 181 Watts. The camera was then re-threaded with a fresh magazine, the first magazine being left in the cold chamber. Another R & D focus test was then shot. After an interval for lunch the refrigerating mechanism was activated and the camera operated periodically to determine at what point and temperatures the camera operation would be impractical. The effects of the thermal inertia of the camera equipment is a factor that will have to be estimated — most certainly not ignored.

At 2:20 PM the heating blankets and inside camera heaters were turned on and temperature in the chamber reduced to —15° in 15 minutes. The effectiveness of the base heaters and the blanket is obvious from the test data. At 2:37 the crew members were removed to "recover" and double check their warm clothing. At 3:00 PM the crew re-entered to shoot the "cold" focus and H & D tests. Up to this time it was obvious that the heating facilities were more than adequate to protect the camera for satisfactory operation at temperatures in the vicinity of —15° to —19°.

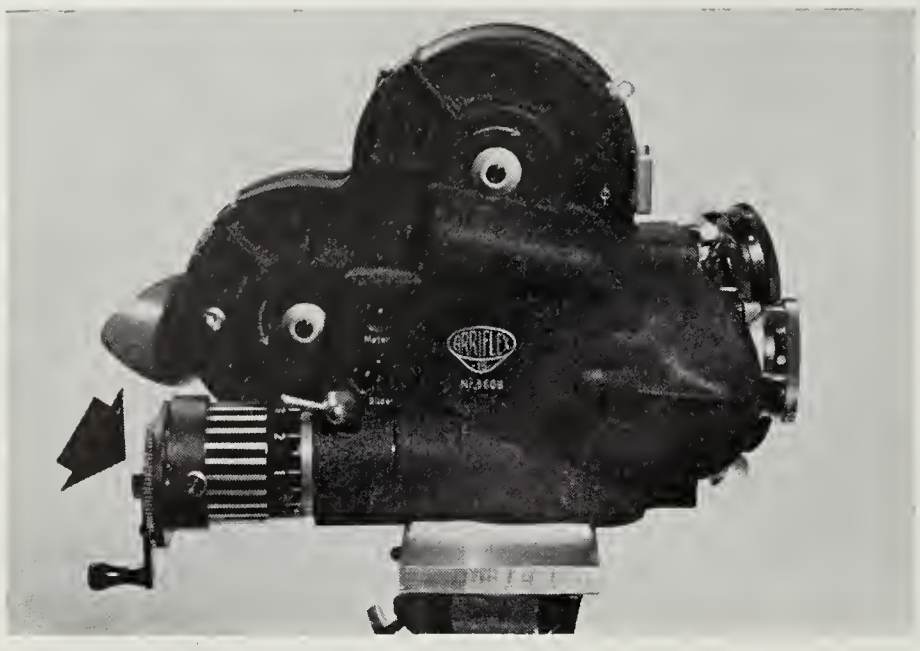
The heating blanket was removed to

(Continued on Page 443)

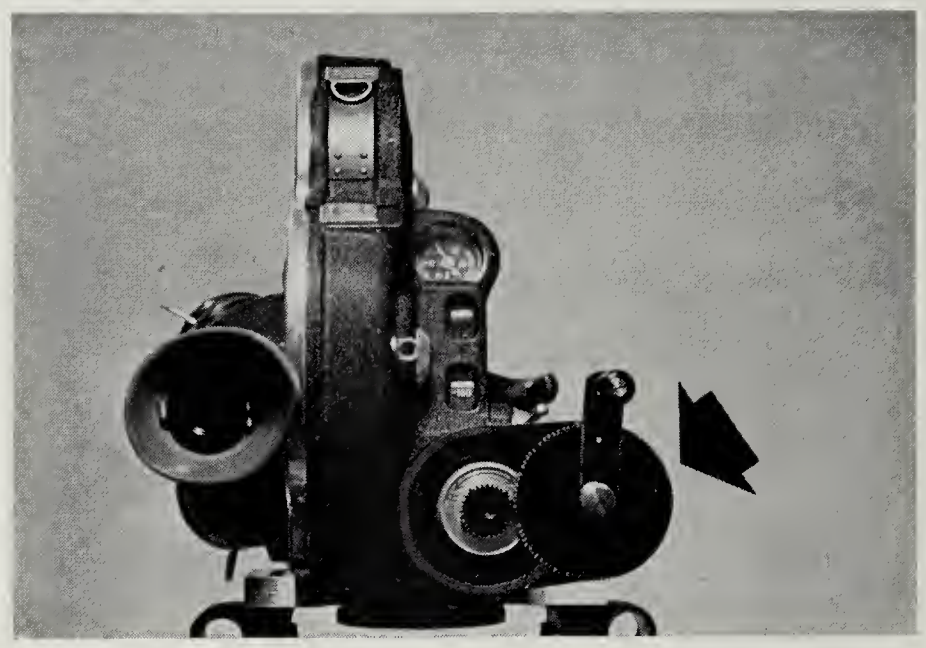
LOG OF COLD CHAMBER TEST PROCEDURE

Scene No.	Time	Chamber	Camera	Motor	Lens	Batt 1	Batt 2	Volts	Amps	Comments
1-2	12:15			83°	83°	83°	78°	43	4.0	Shot R&D
2-1	12:30									Shot H&D. Camera re-threaded with fresh magazine; 1st mag. left in chamber.
3-1	12:35	81°		87°	87°	87°	82°	43	4.2	Shot R&D
					(Time out far lunch)					
	1:40									Freezer turned on
	1:44	30°	80°	73°	73°	75°	40°			
	1:49	6°	77°	57°	53°	58°	6°			
	1:51							43	5.1	Short run
	1:55	—14°	73°	40°	37°	76°	10°			
	1:57							43	6.6	Resistance entirely aut. Chamber opened, blanket put on, heater connected, chamber closed.
	2:20	43°	68°	59°	59°	68°	44°			
	2:25	—3.5°	75°	62°	59.5°	65°	3°			Almast all heating units cut aut.
	2:33	—16°	80°	66°	59.5°	63°	—10°			
6-1	2:35							42.5	4.8	100 ft. test run.
	2:37									Freezer stopped, crew removed from chamber; freezer started.
	2:46	—15°	86°	71.5°	60°	56°	—9°			
	2:55	—19°	98.5°	77°	59°	52.5°	—15°			
	3:00									Chamber apened; crew re-entered; freezer re-started.
7-1	3:09	—19°	92°	75°	63°	46.5°	—15°	42.5	4.3	Shat R&D facus test.
	3:15	—20°	79°	52°	—13.5°	39°	—15°			
	3:15									Camera rethreaded using 1st magazine; film was "tender." Heating pads were not replaced for duratian of shooting to facilitate H&D and R&D tests.
8-1	3:25	—20°	70.5°	28°	—17°	36.5°	—16°	42¼	6.4	H&D test.
9-1	3:30	—21°	67°	31½°	—16°	33½°	—15°	42	6.7	Motor current fluctuating.
9-2	3:32							41½	6.8	Resistance aut. Crew discovered lens thermocouple had fallen off. Same replaced; heating pads replaced.
	3:41									Crew members were brought aut of chamber and chamber re-sealed. Controls were set far —35° Fl
	3:53	—29°	66°	40½°	22½°	25°	—27°			
	3:56									Chamber cantrals set for —50° F.
	4:04	—40°	68°	47½°	21½°	28°	—37°			
	4:10	—40°	68½°	47°	19½°	19½°	—37°	42	6.6	Doar opened and crew re-entered. Glass filter immediately clauded up; was cleared.
	4:16	—30°	69½°	51°	25°	34½°	—37°			
10-1	4:23	—44°	71½°	51½°	23½°	16°	—45°	42	6.0	Shot R&D focus test approx. 50 ft.

FIG. 4—Log of four-hour cold chamber test in which camera, lenses and motor performances were observed under varying temperatures.



ARROW POINTS to gadget attached to motor of the Arriflex-16 which makes possible the manual opening and closing of shutter for single-frame animation exposures.



END VIEW of gadget showing the three-to-one reduction gears. Click stops indicate one-half revolution of device. One complete revolution opens and closes shutter for a single frame exposure.

Animation With The Arriflex-16

College film makers develop simple device for producing single-frame animation with the 16mm Arriflex camera.

By IRA LATOUR

Instructor, San Francisco State College

WHEN WE STARTED production on a film dealing with the new philosophy of lettering developed by Professor Seymour Locks it was decided that to illustrate properly his ideas it would be necessary to run many sequences in animation. We had a 16mm Arriflex camera, but it was with some disappointment we realized that for animation photography this equipment required an animation motor. At that time the motor was unavailable in this country, and even now it represents a sizeable investment for the small film maker.

Mr. William Quandt of the Photography Department of San Francisco School of Fine Arts suggested the very simple idea of using a Time-o-lite to obtain exposures. For each exposure the houselights would be turned off, the shutter opened by the shutter control knob at the end of the standard Arriflex eight-volt motor, and the photofloods turned on for the required exposure time by means of the Time-o-lite. After exposure the shutter would be closed and houselights turned back on for the next change of cell or drawing.

For the complete cycle of one frame it was necessary to turn the shutter knob three complete turns, or in other words, to open the shutter the knob had to be moved one and a half turns, to close it, an additional turn and a half. This was not only laborious but tended to produce human error. Obviously some device was needed to reduce the number of revolutions and to mark them on a simple dial to reduce the danger of confusion.

(Continued on Page 433)



TO PRODUCE an animated film of simple painting Arriflex 16mm camera fitted with gadget pictured above was used by students of San Francisco State College. Here artist adds another stroke of color to painting which will be recorded in a single-frame exposure.

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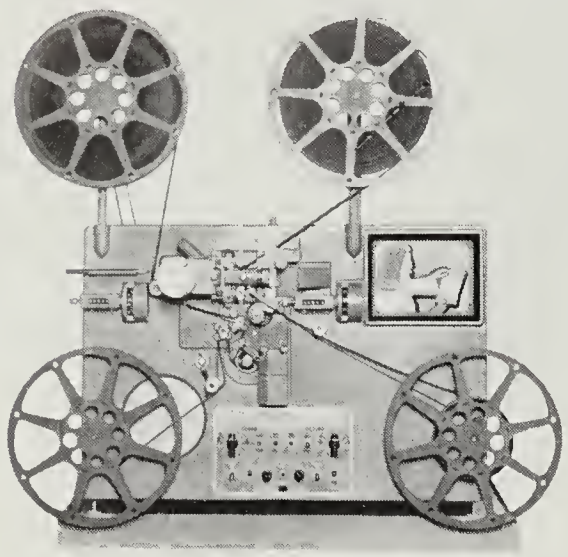
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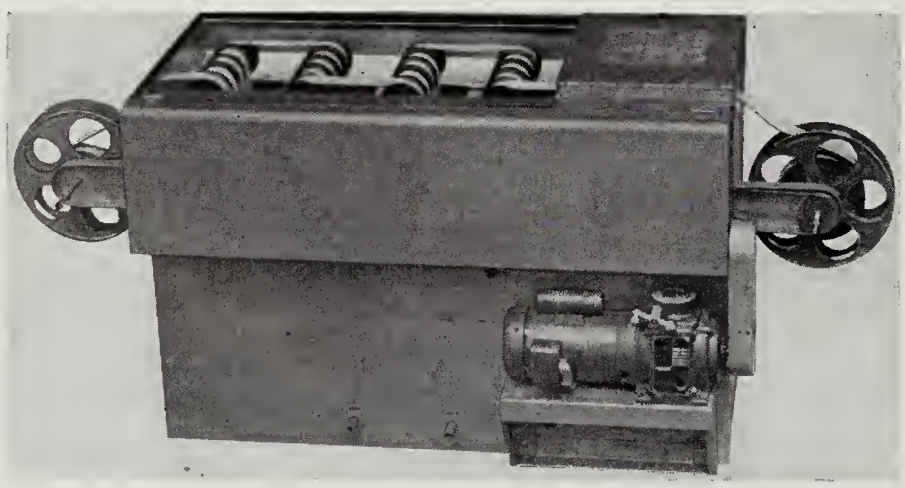
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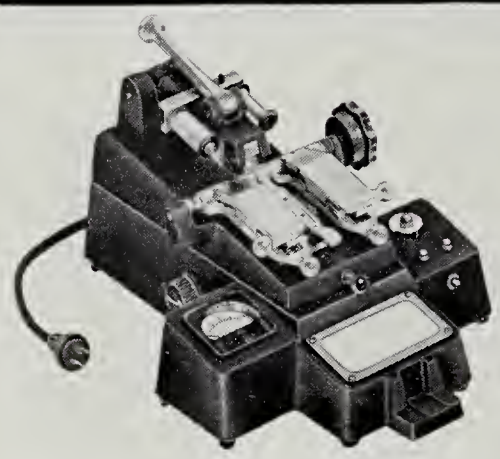
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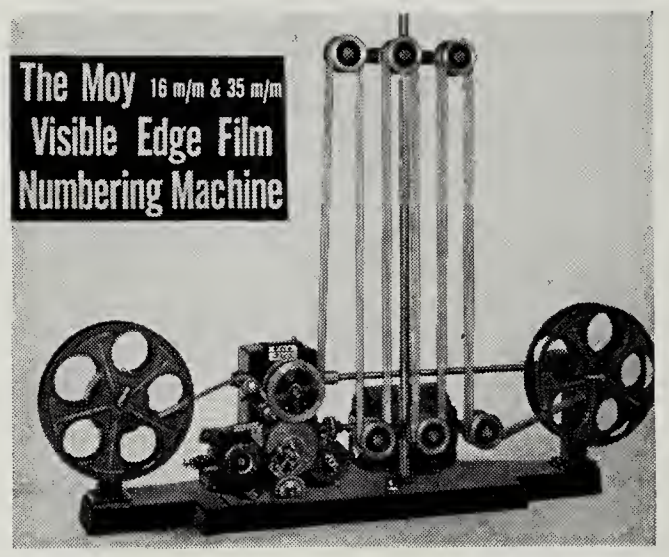


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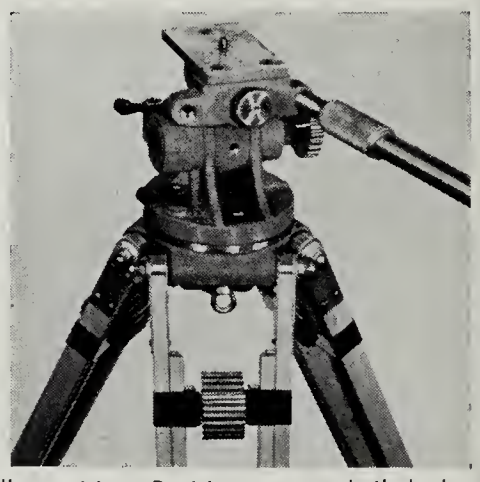
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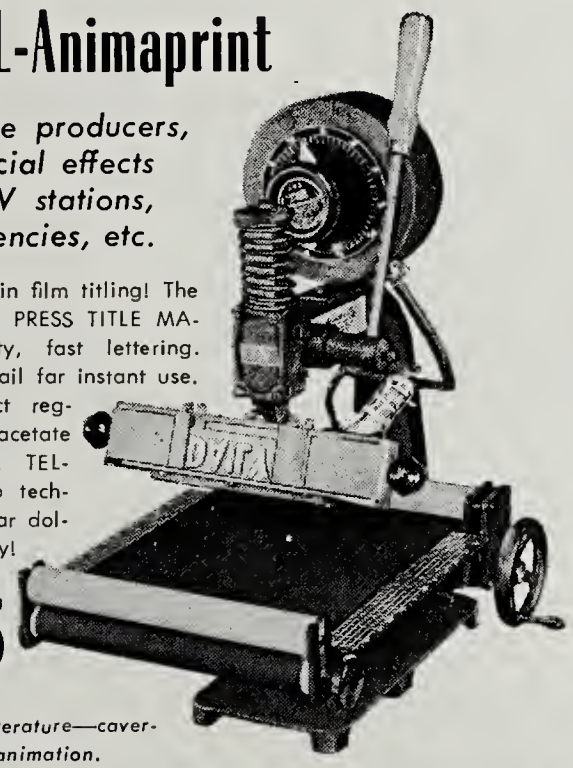
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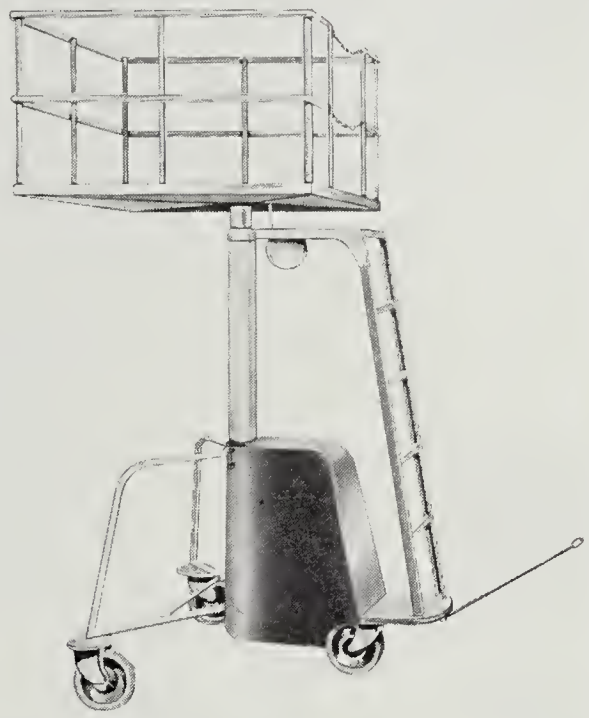
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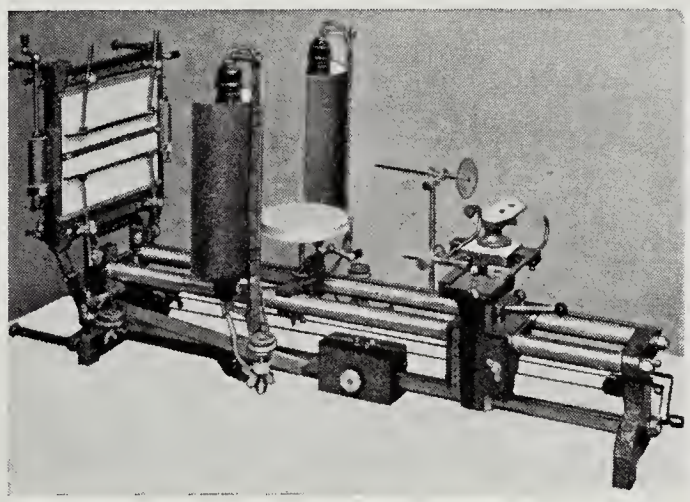


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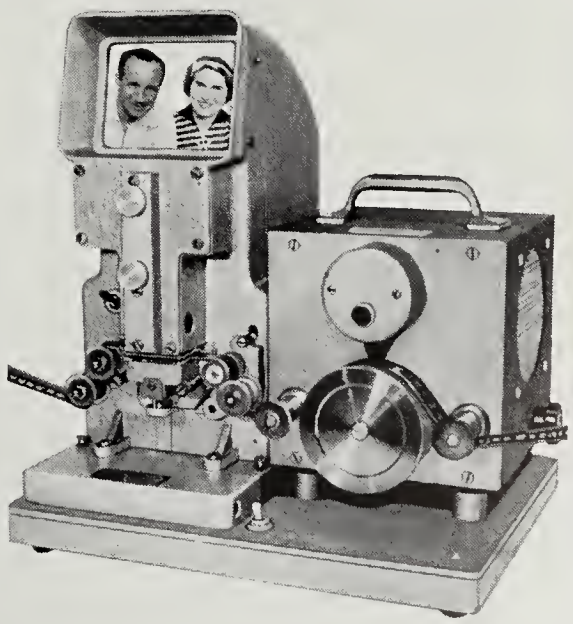
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ONE OF THE NINE cameras that photograph the "Do You Trust Your Wife?" TV show in Hollywood is shown here recording Edgar Bergen and his popular dummy-character Effie Klinker in closeup during a recent show, as director Jim Morgan (light coat) and his assistant Raoul Pagel, standing beside camera, look on. Meanwhile, Director of Photography Dan Clark (lower right) keeps a sharp eye on the lighting.

PUTTING THE EDGAR BERGEN TELEVISION SHOW ON FILM

Cinematographer Dan Clark uses battery of nine Mitchell cameras to photograph "Do You Trust Your Wife?" in a continuous run.

By ARTHUR ROWAN

NINE MITCHELL 35MM cameras are used to photograph Edgar Bergen's weekly television show, " Do You Trust Your Wife?". The nine cameras and the lenses supplied with them are rarely the same as used the previous week and invariably it is a different camera crew that is supplied by the Union for the one-night-a-week chore of recording on film one of television's top hit shows. Obviously, this poses problems for Dan B. Clark, A.S.C., the show's Director of Photography.

Technically, the thing Clark misses most is lenses calibrated in T-Stops. Clark, who at one time headed the Camera Department at 20th Century-Fox, is an exponent of the T.Stop system. With uniformly calibrated lenses on all the cameras, he says, photographic quality of the show would be greatly improved. This typifies the conscientious effort with which Clark has tackled the photography of this show since its inception. He photographed the pilot and has directed the photography of 37 shows to date. To the eye of the discerning technician, each show reveals consistent improvement both in the photography and lighting.

"Do You Trust Your Wife?" which is produced by Don Fedderson in association with Edgar Bergen and directed by Jim Morgan, is a novel quiz program in which married couples are the contestants and the husbands make a choice of "trusting their wives" or trusting themselves to the give the right answers to questions propounded by quizmaster Edgar Bergen. Bergen's internationally-famous associates, Charlie McCarthy, Mortimer Snerd and Effie Klinker, also make brief appearances. Readers who are regular followers of the show will recognize the typical program scene pictured in photo on this page.

In the early days of the show, the set was spread out too much, which posed problems in the lighting. Clark has convinced the producer that by compressing the set—keeping Bergen and his contestants closer together at all times—photography can be simplified with improved quality resulting on the screen. Today, most of the show's action is staged within an area of approximately 12 feet, although the varied camera angles and expert editing give the illusion of greater space. The setup is pictured in the photo at top of page and shows one of the cameras photographing Bergen and Effie in closeup as Bergen interviews two contestants.

Although "Do You Trust Your Wife?" is a CBS program, it is photographed on Tuesday nights on Stage A at NBC's studios in Hollywood where each week on a different night the Groucho Marx Show is filmed. Actually, the filming format of the Bergen show is quite similar, except that eight cameras are used on the Marx show compared to nine used on Bergen's. The show follows the same "live audience" format as the Marx show, which means that it proceeds continuously before a studio audience with the cameras and sound apparatus recording continuously all that is said and done. Filming consumes the better part of an hour, during which time between 20,000 and 30,000 feet of negative is exposed. Later this is edited down to the standard footage for a half-hour show.

Eight of the nine cameras are dis-

persed in pairs at strategic points around the set, the pairs designated for reference as A, B, C, and D. The ninth camera works alone. It is set up behind the set and is focused on the twin blackboards to which Bergen sends his contestants to work out answers to quiz questions. It is started and stopped by remote control by Clark from a position directly in front of the set. Lens used on this camera is a 25mm.

The pair of cameras in the A group are to the left of the set and work with 100mm lenses. They are focused on Edgar Bergen, the dummy (when one is used), and announcer Bob Lemond whenever he comes to the microphone.

The B group cameras are directly in front of the set and pick up the whole set in a master shot—including Bergen, the contestants and the sponsor's sign hanging just above in the background. The working lenses on these cameras are 50mm.

The C and D group cameras are at the right of the set. Their arrangement is shown in the photo on the cover and also in the illustration on page 434. The first two cameras work with 75mm lenses and are focused on the contestants. The next two cameras are the D group; with 150mm lenses, they record the contestants in closeup.

Unlike the conventional feature motion picture, the Edgar Bergen show is recorded continuously as it progresses. There is not the usual interruption for change of camera setups to make closeups, reverse angle shots, etc. Four cameras are turning continuously, recording the action from four different angles and in different aspect dimensions (closeups, long shots, etc.)

As the show starts, picture and sound are synced with slate and clapstick on a recording tape which runs continuously throughout the filming of the show. Thereafter, only the picture film is sync-marked with a bloop light in each camera, as follows: When the No. 1 camera in each position (A, B, C, and D) is running out of film, the No. 2 camera is started, at which time the films in both cameras are sync-marked or "blooped" simultaneously. The No. 1 camera is reloaded and made ready to resume operation when the film in camera No. 2 nears the end of the spool, and so on continuously throughout the show. Each pair of cameras in the A, B, C and D positions (see diagram) operate independently for protection in case mechanical trouble should develop in any one camera.

In the early days of the show when the set was spread out more, it required 700 amps of light to photograph it. Today, with the action compressed within a smaller area, only 400 amps are required. Two 150 FC keylight sources are used. One is directed on Edgar Bergen and the other—coming from a different angle—is directed on the contestants. Carefully adjusted barndoors on the lamps confine the light beams on the respective subjects so that one source does not conflict with the other.

The format of the show plus the fact that it takes place before a studio audience makes it impossible to use lighting equipment on the floor. For this reason all set lighting units are suspended from the ceiling. This means

(Continued on Page 434)



WHILE DIRECTOR of Photography Dan Clark (center) checks the light with a meter, operators stand by four of the nine cameras that record the Edgar Bergen show, "Do You Trust Your Wife?" The show is photographed continuously, with four cameras recording and four standing by to take over when film in first four cameras runs low.

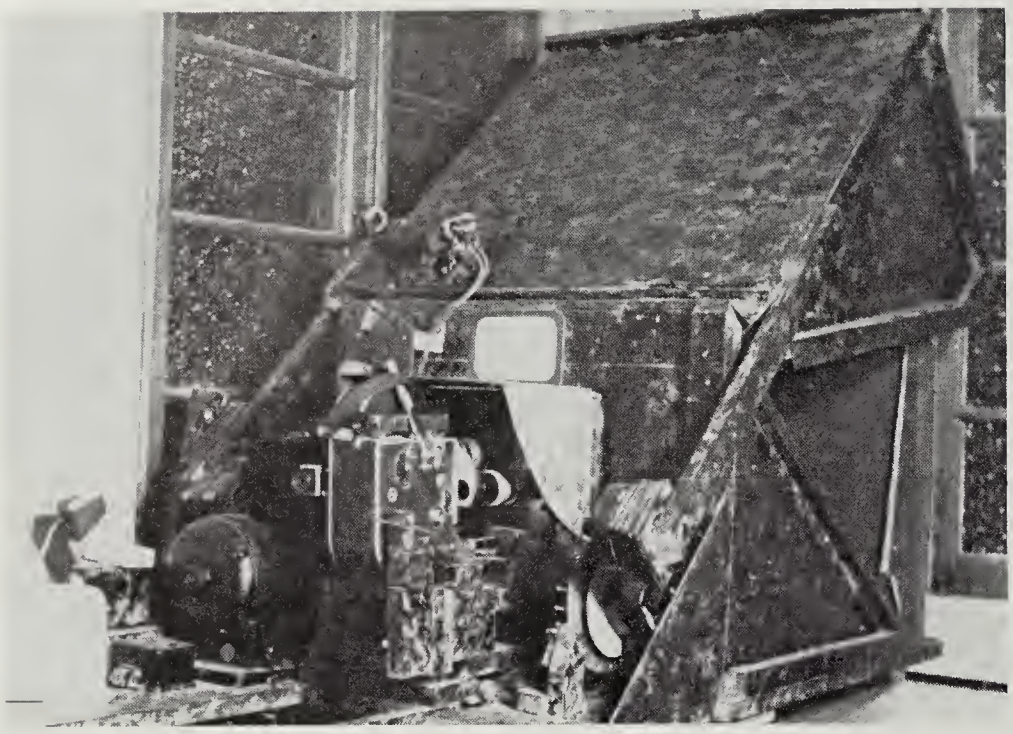


FIG. 1—The unit in "off" position. Note that lid of compartment is open which permits daylight to reach growing plant—the subject of the filming. Mercury switch on lid controls the photolamps.

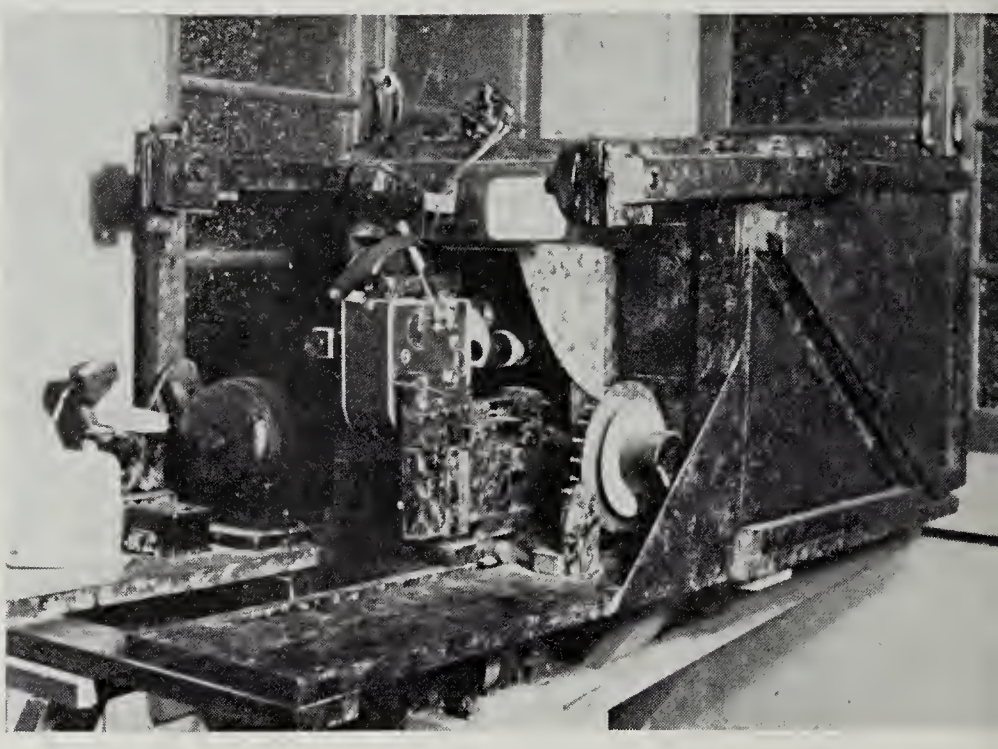


FIG. 2—Unit in operation making an exposure. Here lid is closed to exclude all daylight, exposure light being furnished by photofloods within compartment. Rotating timer disc is at right of camera.

A Portable, Automatic Interval Timer

Australian filmers build unique equipment which houses camera, subject and lights and actuates exposures at intervals from 2½ minutes to 1 hour.

By PAUL F. RUCKERT

Producer, Invincible Studios, Brisbane, Australia

NECESSITY IS THE mother of invention, so the saying goes, so when our studio was faced with the need for equipment to produce time-lapse photography of nature subjects, we had to build our own because nothing of this sort was available on the local market. And because cost also must be considered by the small studio such as ours, we were delighted to find that our home-made outfit cost us only $65.00 We have exposed many hundreds of feet of 16mm Kodachrome with the unit, which has never missed a frame of film.

It is not our intention here to dwell on the fundamentals of time-lapse cinematography. This type of photography should only be undertaken by the skilled worker—the professional or advanced amateur who knows the basic principles of time-lapse. The beginner will find text books available explaining the fundamentals.

Believing that other film producers may find interest in our time-lapse equipment, we shall give details here of its construction and describe its operation. It will be noted that we have kept electrical switches and contacts to a minimum, because simplicity is the most important factor—no small consideration when we realize that a device of this kind must function without error in order to produce smooth, uninterrupted action in interval exposures.

Most nature subjects such as the growth of plants and the bursting of flower buds into bloom, require at least two days of continuous interval photography to record. With some plant life cycles, it is necessary to carry out the time-lapse photography over a period of two to three weeks. Therefore, to obtain uniform exposures in both day and night periods, the photographic illuminatiion must be the same. This means using artificial light entirely for photography and excluding all daylinght during the daytime exposures, but at the same time providing for daylight to reach the growing plants between exposure intervals. A plant cannot grow in darkness; it requires natural daylight for this. This explains the rather unique equipment which we have designed. In use it is placed near a window which will allow the morning sun to reach the growing subject during the in-between-exposure intervals.

We started by constructing, from 1-inch pine boards, a box 2 feet square by 2 feet high that would house our subjects and the two 500-watt photolamps required for photography. The box was mounted on a wooden base and fitted with a sliding cradle for the camera that allowed for varying the camera-distance-to-subject from 4 feet down to 6 inches. We decided on a hinged lid for the box that would open close automatically each time an exposure was to be made. The complete unit can easily be moved and put into operation anywhere that electric current is available.

The lid of the box is balanced with weights; a minimum of power is therefore needed to close the lid. We use an ex-army 1/8th H.P. motor with 100-to-1 reduction gearbox. To this we have added another 3-to-1 reduction gear giving a very slow moving spindle onto which

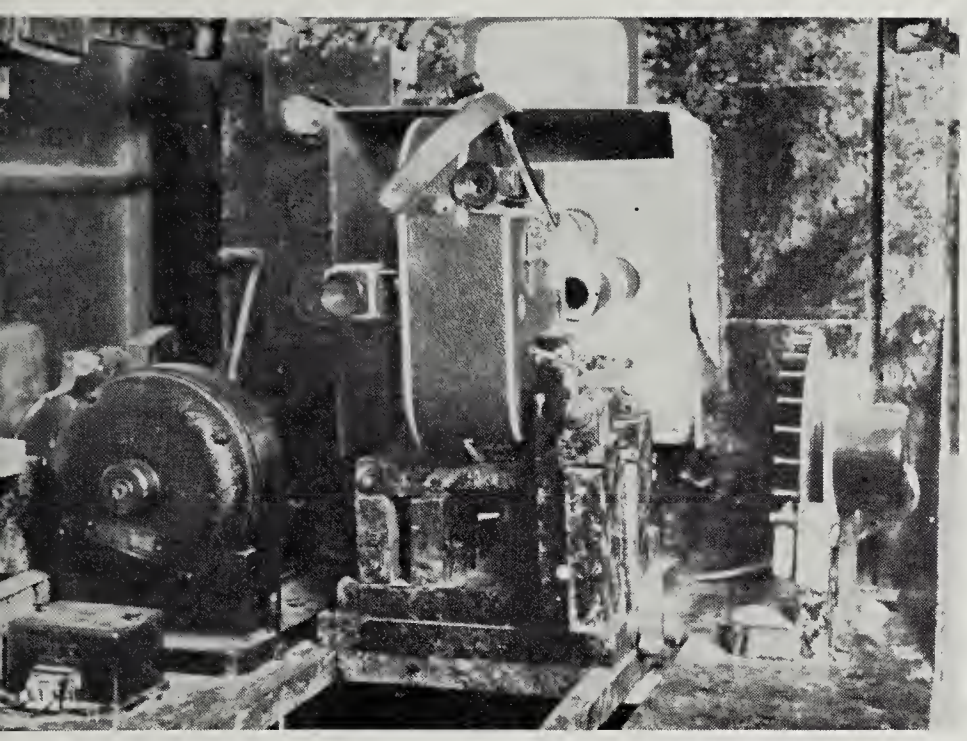


FIG. 3—Closer view looking toward subject of filming. Here may be seen the actuating motor (left) and the interval timer disc at right. Camera used is a Bolex H-16 mounted on sliding base.

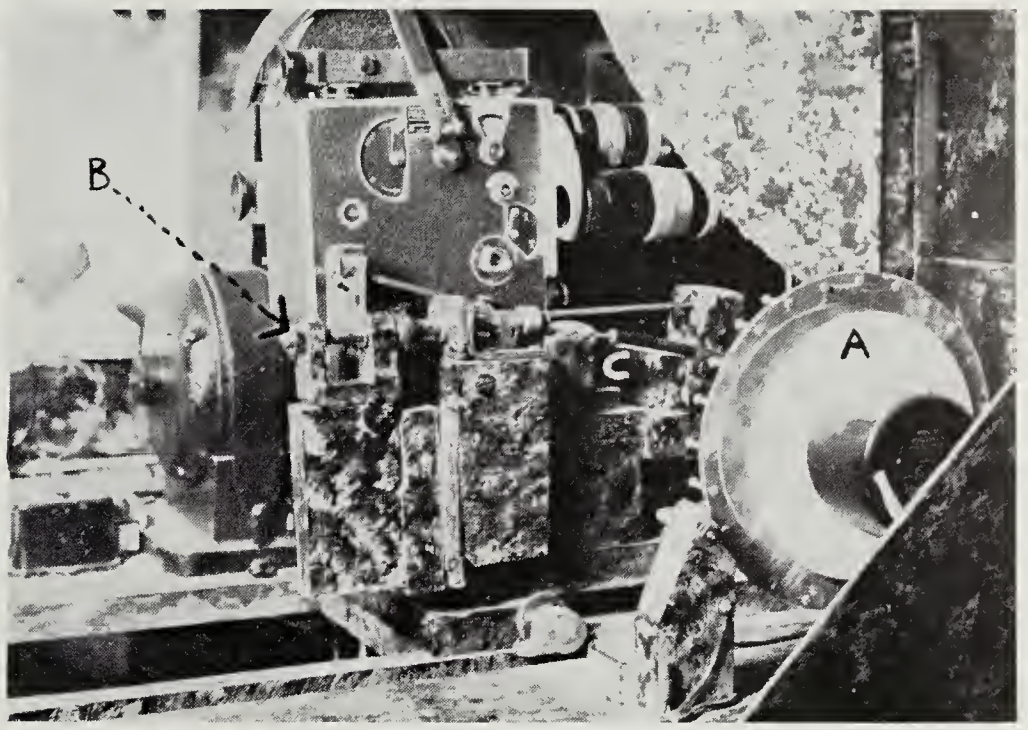


FIG. 4—Timer disc with interval studs is shown at A. Camera exposure release is shown at B, which is connected to cable C that extends to solonoid energizing the exposure mechanism.

a disc is mounted. To this disc a series of arms are attached to drive the lid of box open and shut. (See Fig. 5).

Incidentally the standard one-inch 16mm camera lens will only focus down to 18 inches. We found the easiest way to focus closer is to remove the lens from camera and re-screw in with a 1-16th-inch thick washer behind the lens. This allows focusing as close as 6 inches or so. If the reader tries this, don't forget to remove the washer when the camera is needed for regular work!

The vital part of a time-lapse unit is the timer which gives a varying interval range. We have found intervals of 2½ to 10 minutes most useful for flowers bursting into bloom, but intervals up to one hour are required for some plant growth.

Our timer is clearly shown in Fig. 4. Purchase a medium-size electric clock which must be self starting (in case of power failure). Remove the hands and fit a very light aluminum disc in place of the minute hand. On the outer edge of the disc drill 24 evenly spaced holes slightly smaller than ⅛th inch. Force ⅛ inch studs into the holes by screwing; these will make their own thread in the soft aluminum. By utilizing all the studs, exposure intervals will be 2½ minutes; by removing every alternative stud you have intervals of 5 minutes, and so on down to 2 studs for half-hour intervals, or one stud for one-hour intervals.

For switching lights on and off, and starting and stopping motor we found 10-amp. mercury switches the most reliable. A mercury switch is mounted on top of the lid for switching on the lights (See Figs. 1 and 2). When the lid tilts the mercury runs down its glass tube making contact between two studs wired to the lights.

In Fig. 3 may be seen a small arm at the bottom of the timer. This is the trip that starts the motor going. As the disc rotates a stud catches the tip of this finely balanced arm, which eventually drops, making a contact between points. These points should be of such metal as will not burn or corrode. We used the points from a door buzzer (points from a motor car distributor will do, too). Use another door buzzer to drop the mercury switch that starts the motor. The end of the mercury switch is finely balanced on

(Continued on Page 444)

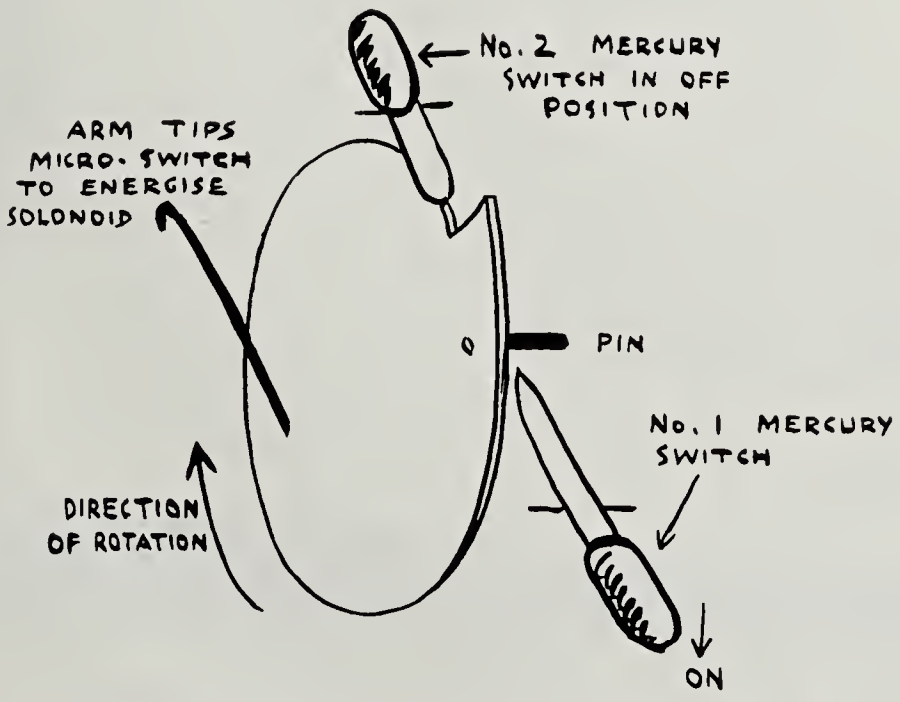


FIG. 5—Diagram of driving disc showing method of contact with the mercury switches that control camera action and lights.

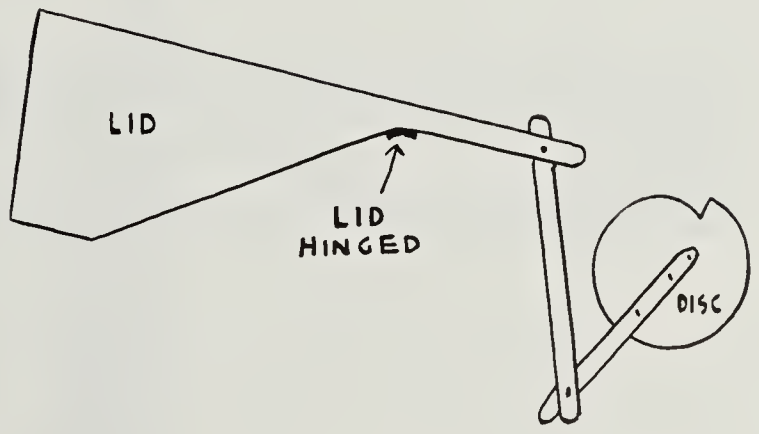


FIG. 6—Diagram showing how driving disc actuates the hinged lid of compartment to open and close same for single-frame exposure.

The Depth Of Field Of Camera Lenses

With special reference to its importance in wide-screen cinematography.

BY THE VERY nature of optical imagery, a lens is capable of forming a sharp image of only a single plane of of the object space. In practice, however, such factors as the aberrations of the lens or the graininess of the film establish a limit for the useful sharpness, so there is a certain "depth of field" that may be said to be in sharp focus. The depth of field is sometimes called the depth of focus, but the latter term has a different significance in optical terminology.

The lack of depth of field in a lens is familiar to anyone who has ever attempted to make photographs with lenses of high relative aperture, but there is nevertheless a great deal of misinformation on this subject. This seems to be a consequence of the custom of judging the depth of field from the results of photographic tests, which are seldom conducted in such a manner as to yield results that are really significant. Even if they are, a lens of poor quality has apparently a greater depth of field than a well-corrected one, and the experimental method of determining the depth of field may therefore be very misleading. It is possible to treat this subject theoretically and, as it happens, the rigorous treatment is less complicated than the approximation that is sometimes made.

This subject is particularly timely because of the current industry trend toward wide film. The effect on the depth of field, when photographing a subject on a wider film, is not immediately apparent. Nor is it apparent that the depth of field may be altered by making a large negative and printing by optical reduction on standard film. The purpose of this article is to consider these questions in some detail, but before this can be done, a certain amount of optical theory must be developed.

The depth of field of any lens or optical system is given rigorously by the two expressions

$$d_1 = \frac{rP}{mp - r} \qquad (1)$$

and

$$d_2 = \frac{rP}{mp + r}, \qquad (2)$$

where d_1 represents the depth of field on the far side of the object-plane in sharp focus and d_2 represents the depth of field on the near side. The total depth of field then is

$$d = d_1 + d_2.$$

In the above equations, r represents the radius of the permissible circle of confusion, P is the distance from the entrance-pupil of the lens to the object-plane on which the camera is focused, m is the magnification of an object in this plane on the film, and p is the radius of the entrance-pupil of the lens.

An erroneous estimate of the depth of field of a lens is sometimes made on the basis of the so-called "hyperfocal distance." This is the minimum distance of an object-plane on which the lens can be focused and still have two objects at infinity appear sharp. In other words, for this condition, the far depth d_1 is infinite. From equation (1), it follows that this condition will obtain when

$$mp - r = 0. \qquad (3)$$

Now, in the Newtonian form of the lens equation,

$$m = \frac{f}{x},$$

where x is the distance of the object-plane in sharp focus from the first focal point of the lens. On substituting for m in equation (3), we have

$$x = \frac{fp}{r}, \qquad (4)$$

where x is the hyperfocal distance measured from the first focal point of the lens. Equation (4) can be written in terms of the f/ number of the lens, since this quantity is the ratio of the focal length to the diameter of the entrance-pupil. On substituting, we have

$$x = \frac{f^2 . \text{f/number}}{2r}. \qquad (5)$$

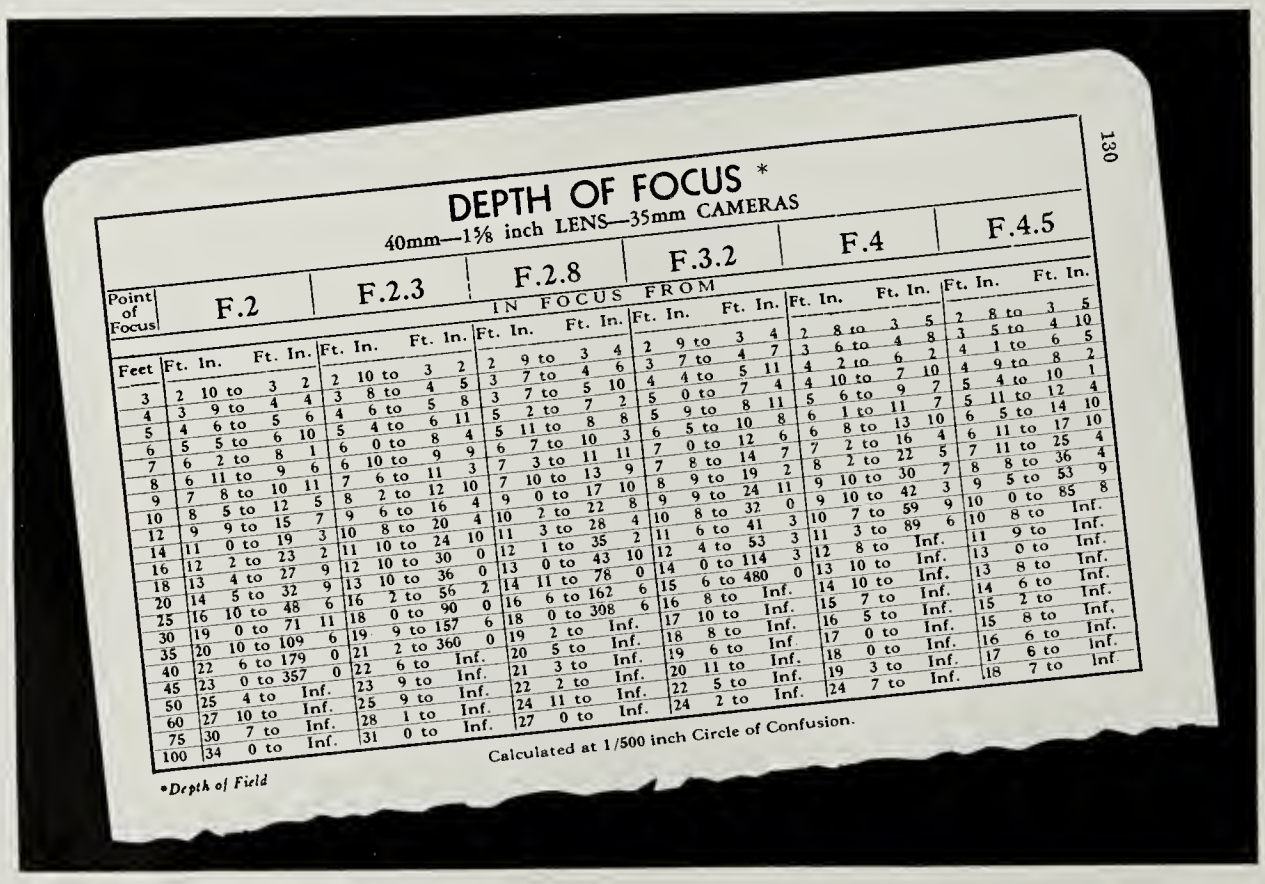
When equation (3) is satisfied, equation (2) shows that the near depth

$$d_2 = \frac{P}{2}. \qquad (6)$$

Hence, when a lens is focused on the hyperfocal distance given by equation (5), all objects are in sharp focus from infinity to a point half-way between the object-plane in sharp focus and the entrance-pupil of the lens.

Now, a short hyperfocal distance indicates a great depth of field when the camera is focused on the hyperfocal distance. It is sometimes concluded from equation (5), therefore, that the depth of field of a lens varies inversely as the f/ number and inversely as the

(Continued on Page 438)



130

DEPTH OF FOCUS *

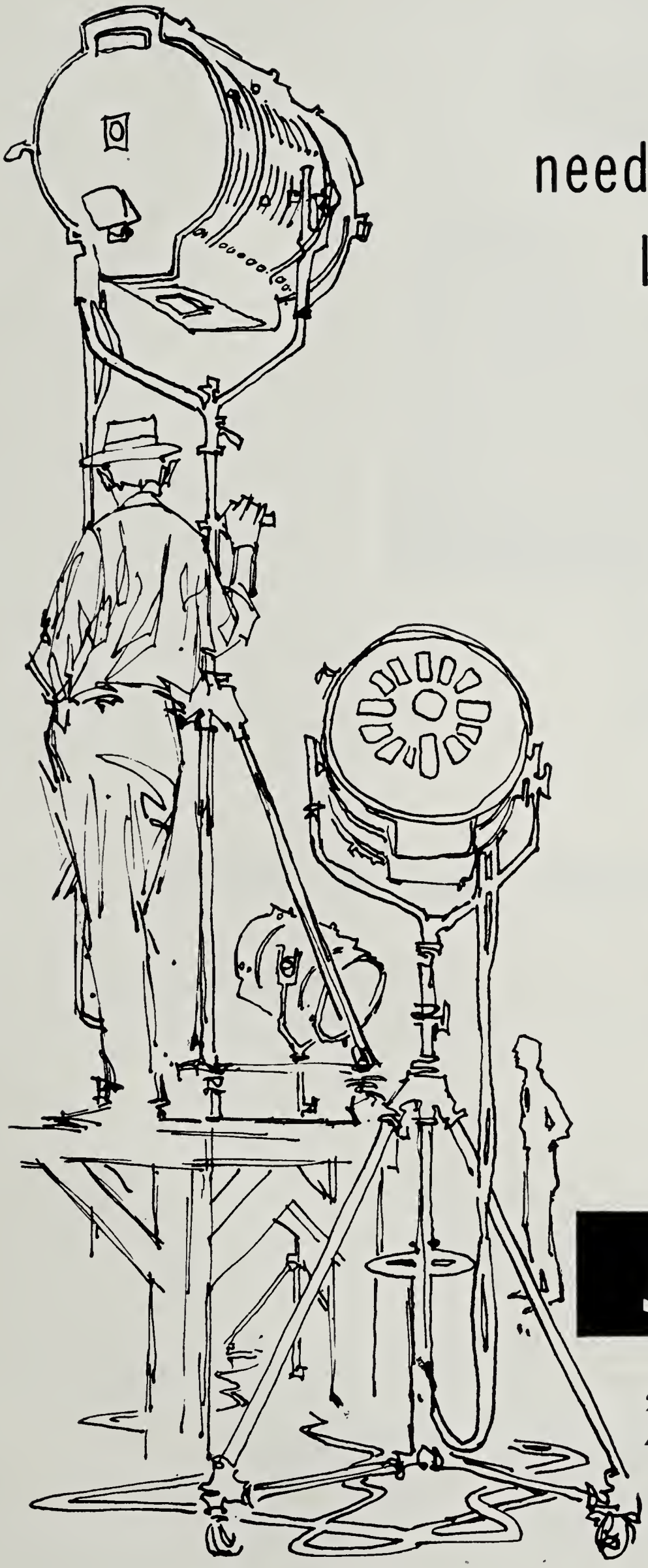
40mm—1⅝ inch LENS—35mm CAMERAS

Point of Focus	F.2		F.2.3		F.2.8		F.3.2		F.4		F.4.5	
	IN FOCUS FROM											
Feet	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
3	2 10 to	3 2	2 10 to	3 2	2 9 to	3 4	2 9 to	3 4	2 8 to	3 5	2 8 to	3 5
4	3 9 to	4 4	3 8 to	4 5	3 7 to	4 6	3 7 to	4 7	3 6 to	4 8	3 5 to	4 10
5	4 6 to	5 6	4 6 to	5 8	3 7 to	5 10	4 4 to	5 11	4 2 to	6 2	4 1 to	6 5
6	5 5 to	6 10	5 4 to	6 11	5 2 to	7 2	5 0 to	7 4	4 10 to	7 10	4 9 to	8 2
7	6 2 to	8 1	6 0 to	8 4	5 11 to	8 8	5 9 to	8 11	5 6 to	9 7	5 4 to	10 1
8	6 11 to	9 6	6 10 to	9 9	6 7 to	10 3	6 5 to	10 6	6 1 to	11 7	5 11 to	12 4
9	7 8 to	10 11	7 6 to	11 3	7 3 to	11 11	7 0 to	12 6	6 8 to	13 10	6 5 to	14 10
10	8 5 to	12 5	8 2 to	12 10	7 10 to	13 9	7 8 to	14 7	7 2 to	16 4	6 11 to	17 10
12	9 9 to	15 7	9 6 to	16 4	9 0 to	17 10	8 9 to	19 2	8 2 to	22 5	7 11 to	25 4
14	11 0 to	19 3	10 8 to	20 4	10 2 to	22 8	9 9 to	24 11	9 10 to	30 7	8 8 to	36 4
16	12 2 to	23 2	11 10 to	24 10	11 3 to	28 4	10 8 to	32 0	9 10 to	42 3	9 5 to	53 9
18	13 4 to	27 9	12 10 to	30 0	12 1 to	35 2	11 6 to	41 3	10 7 to	59 9	10 0 to	85 8
20	14 5 to	32 9	13 10 to	36 0	13 0 to	43 10	12 4 to	53 3	11 3 to	89 6	10 8 to	Inf.
25	16 10 to	48 6	16 2 to	56 2	14 11 to	78 0	14 0 to	114 3	12 8 to	Inf.	11 9 to	Inf.
30	19 0 to	71 11	18 0 to	90 0	16 6 to	162 6	15 6 to	480 0	13 10 to	Inf.	13 0 to	Inf.
35	20 10 to	109 6	19 9 to	157 6	18 0 to	308 6	16 8 to	Inf.	14 10 to	Inf.	13 8 to	Inf.
40	22 6 to	179 0	21 2 to	360 0	19 2 to	Inf.	17 10 to	Inf.	15 7 to	Inf.	14 6 to	Inf.
45	23 0 to	357 0	22 6 to	Inf.	20 5 to	Inf.	18 8 to	Inf.	16 5 to	Inf.	15 2 to	Inf.
50	25 4 to	Inf.	23 9 to	Inf.	21 3 to	Inf.	19 6 to	Inf.	17 0 to	Inf.	15 8 to	Inf.
60	27 10 to	Inf.	25 9 to	Inf.	22 2 to	Inf.	20 11 to	Inf.	18 0 to	Inf.	16 6 to	Inf.
75	30 7 to	Inf.	28 1 to	Inf.	24 11 to	Inf.	22 5 to	Inf.	19 3 to	Inf.	17 6 to	Inf.
100	34 0 to	Inf.	31 0 to	Inf.	27 0 to	Inf.	24 2 to	Inf.	24 7 to	Inf.	18 7 to	Inf.

Calculated at 1/500 inch Circle of Confusion.

*Depth of Field

DEPTH OF FIELD charts are available for most of the lenses currently in use in 35mm and 16mm cinematography. Reproduced above is a page from American Cinematograper Handbook, edited by Jackson J. Rose, ASC. Here the term "Depth of Focus" is used instead of "Depth of Field," due to the more general use of the former term by studio technicians.



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ACTUAL CUTTING is done when all rolls of film are lined up in the gang synchronizer, as shown above. Splicing can be done immediately or scenes can be cut a little long and taped to the preceding scene for splicing later.

Editing Technique For TV Films

A simplified system of editing television films that are phtographed with two or more cameras running simultaneously

By HYMAN R. COHEN

PHILIP TANNURA'S ARTICLE in the May 1954 issue of American Cinematographer introduced a system of low-cost lighting and shooting of TV films. There are some very logical outcomes of this method, in the editing department, which complement very nicely the purposes and the techniques which he expounded — and which are the subject of this article.

Generally speaking, the editing technique to be described is more readily adapted to somewhat simpler films of the expository or demonstration type, which can be shot on a single set with two or three cameras running simultaneously. One camera usually covers the action in "long shot," while the other cameras provide "closeup," "variant angle" or "alternate object" shots. This technique is especially suitable for producing, at low cost, a film which has the effect of being "live" and spontaneous.

The Dione Lucas Show, produced by the Arthur Modell Agency and directed by Mort Zimmerman at the Fletcher Smith Studios in New York City is a case in point. Miss Lucas performs her inimitable demonstrations of expert cookery while giving a lively extemporaneous commentary as the several cameras record the action, each from its own carefully selected angle and chosen field. The recorded action constitutes the body of the show, with no extra shooting to speak of being required.

How can the editing, too, be handled in the simplest way?

By and large, the method of shooting suggests the technique of cutting. All cameras register the initial closing of the clapstick in order to attain synchronization of all the rolls of film running simultaneously. Assuming that there are no other problems (there usually are and they will be considered below) we will have, let us say, three synchronously-exposed negatives and a sound track to work with.

If time permits, all the "dailies" should be viewed as separate interlocks with the track. If not, at least the "long shot" roll should be so viewed in projection on the screen. The nature of the commentary and other pertinent factors, as well as editing principles themselves, will determine at which points it is desirable to cut from the "long shot" roll to one of the other rolls and back again. Some pertinent points might well be: 1) Was the second or third camera actually covering the desired object? 2) Is the action obscured by the position of the demonstrator, in the new angle? 3) Is the photographic quality of the alternate shot acceptable?, etc.

A refined type of cutting can be achieved with the use of a 2- or 3-gang picture-head Moviola. However, an adequate job can be done by viewing the "long shot" roll and marking the frames where the cuts to the other rolls will be made. The actual cutting is done when all rolls are lined up in the synchronizer. In order to make the eventual problem of matching negative to work print as simple as possible (especially if there are no key numbers on the print, as is true of a 16mm reduction print) the following technique is recommended:

1. All cuts are made on the frame line in the splicer so that no frames are lost.

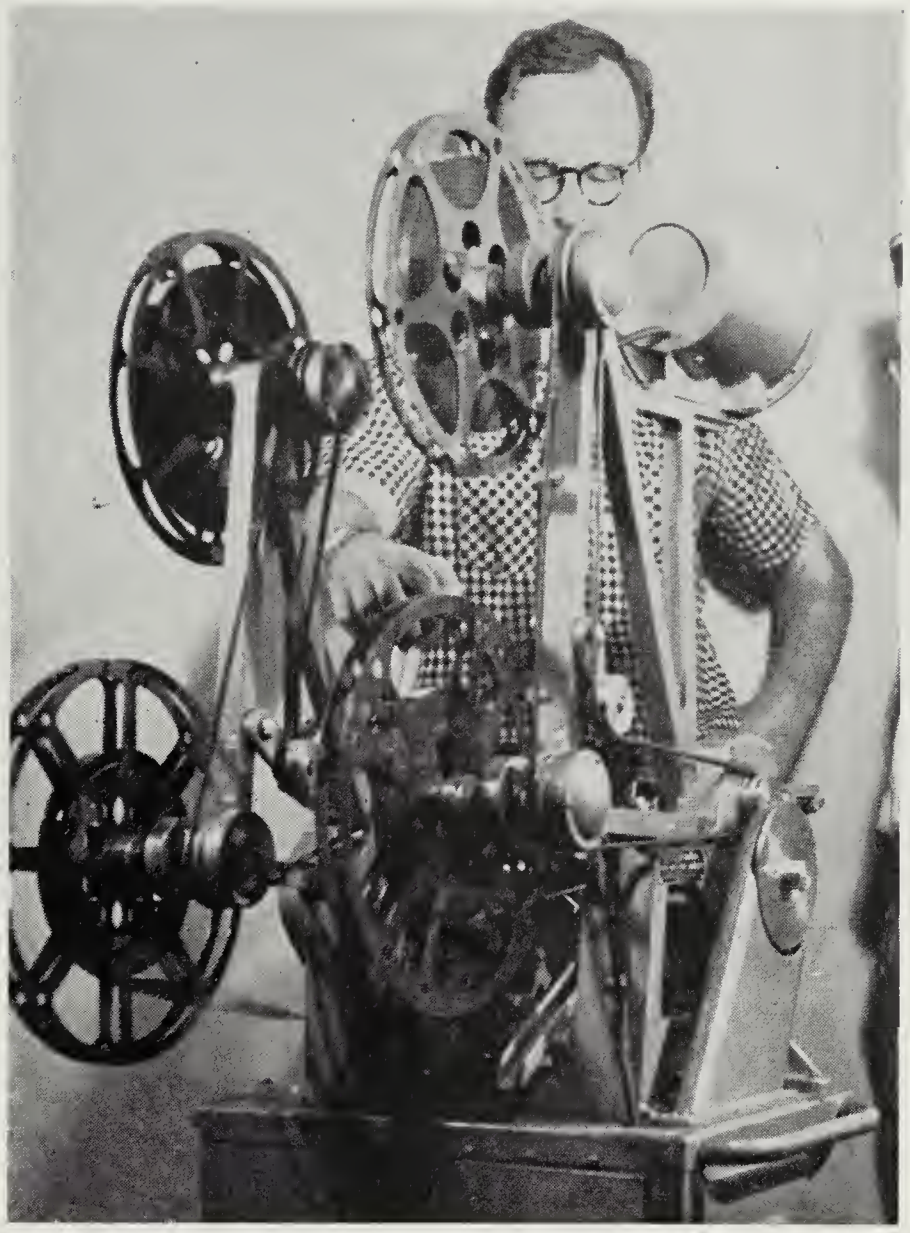
2. Every time a length of film is lifted from the "long shot" roll (#1 roll), it is replaced by an equal length from

either of the other rolls, and the replaced scene or cut is taped in place in exact synchronization in the appropriate roll (#1 or #3) in such a way that it will go through the synchronizer readily and in synchronization with the other rolls.

3. Thus, our #1 roll will really become the work print and the other two rolls will have taped-in sections with all frames in synchronization. (Very imporant if any changes are to be made later.)

4. When the negative is to be matched to the work print, on which incidently, we have retained the full head trim containing the closed clap-stick frame and have merely marked the "first frame of picture," all negative rolls are lined up in the synchronizer at the closed clap-stick mark and the work is rolled down to the first frame. This frame is then scribed (on the roll which will carry the first scene). This first scene is spliced to the prepared leader. The work is rolled down and wherever a splice occurs in the work print, the synchronous frame in the negative roll which matches the scene coming up in the work print is scribed. The splicing can be done immediately or the scenes can be cut a little long and taped to the preceding scene for splicing later. A lifted length of film is always switched with corresponding film taken from the roll that replaces it, so that each roll keeps the proper relationship of all scenes or cuts, as was done with the work print. Naturally, care must be taken to keep all subsequent frames in synchronization. Thus we will have one roll matched to the work print and the other two rolls will, in effect, be trims.

By way of recapitulation, let us see how this system differs from and, for certain purposes, is superior to the usual method of shooting with one camera and editing in the usual way. In the first place, the action is shot continuously in all cameras so that all cuts can be made "on action" and in perfect synchronization by the simple methods outlined above. Secondly, this method eliminates the necessity of breaking down shots, rearranging in sequential order, etc. Thirdly, matching of negative to work print is simplified, as the two have to be lined up only once. This is a great time and energy saver in cases where there are no matching key numbers, as when we work with 35mm negative and 16mm reduction work prints. Inserts and opticals are handled in the usual way.



A REFINED type of cutting can be achieved using a 2- or 3- picture-head Moviola.

Above we have developed a general, simplified "theory" of the editing technique employed with the 2- or 3-camera shooting technique. However, it must be admitted that every technique involves its own peculiar problems and invites its own complications. Hence the following precautions:

1. Since a complete show will generally run longer than the capacity of the cameras' magazines, it will have to be filmed in two or three sections. Careful planning of accurately directed "bridges" from one section to the next must be borne in mind and these must be recorded on film, with appropriate overlap of action.

2. A fairly accurate conception of the length of time involved in each section of the show must be kept in mind by the director and adjusted to the footage available in the camera.

3. All camera operations must be cued, either in advance by a "dry run" or during the shooting by appropriate means, as to the shots which are to be covered by each camera. This may mean that while the "longshot" camera may follow the "actor" about in any movement, the other cameras may stay

(Continued on Page 440)

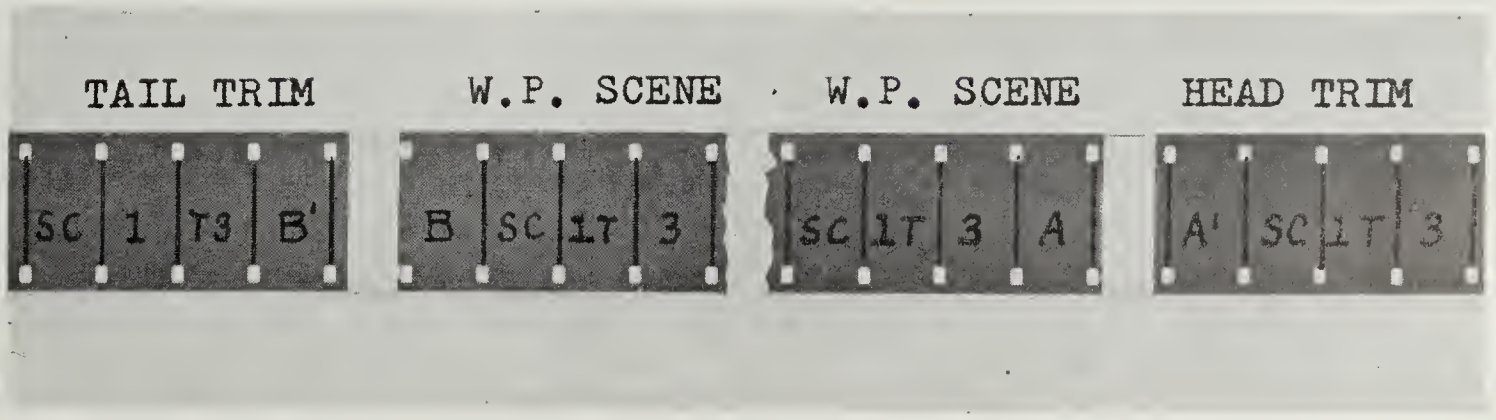


FIG. 1—All cuts are made in a splicer without losing frames. The head and tail trims are kept at hand in a barrel and are marked to match the adjacent frame in the work print.



BALLOON-TIRED dolly provides smooth travel of camera on board track for location shot for MGM's "The Last Hunt."



WHEN THE director wanted the camera to follow a traveler on snowshoes for "Storm Fear,' it was mounted on two toboggans lashed together.

MOVING CAMERA SHOTS

Many and varied are the conveyances used by studio cinematographers in making dramatic dolly and trucking shots.

By FREDERICK FOSTER

WHEN THE ZOOM LENS was first introduced for motion pictures, it was freely predicted that it would largely supplant the dolly, camera car and crane as a means of making those moving camera shots that bring the action progressively closer on the screen. Despite these predictions, the moving camera shot and the mobile carriers used in their execution continue popular with all feature film producers.

Of course, the photographic effect that can be produced with a zoom lens does not equal in scope that which can be achieved by a camera mounted on a dolly or other mobile camera carrier, which is probably the reason the latter technique continues popular.

Besides the conventional dollies, cranes, and motorized camera carriers, many other ingenious devices have been utilized to effect a "moving camera" shot. The pictures on these pages show some of the methods that have been used by various Hollywood studios in photographing some highly dramatic scenes for recent productions.

Moving camera shots are invariably more specifically defined as "dolly shot," or "trucking shot," "follow shot," etc., and are understood to indicate that the camera follows a given action or player in order to keep them the same dimension on the screen throughout the action, or to move the camera progressively away from or toward a subject or action for sharp dramatic effect—an effect similar to that achieved by a zoom lens.

Such shots are the result of very careful planning at the time the script is prepared, and are specified in a script as the best means for achieving pictorial or dramatic emphasis with the camera. The director of photography and his camera crew execute such shots according to the script directions, unless the decision is a last minute choice of the director.

Vehicles or carriers used in the studios and on location for moving the camera as it is photographing a scene range from the simple fixed, four-wheel dolly, to the 8-cylinder motor propelled camera car and the giant mobile camera crane. Where a dolly is used, whether out of doors or on the sound stage, it usually is operated on tracks. These are constructed from lengths of channeled aluminum girders or from lengths of 2″-by-12″ lumber. The first photo on this page shows a simple 4-wheel dolly equipped with balloon tires operating on a board track erected on a remote location site. Here the dolly is moved progressively backward while the camera follows the two riders in a closeup shot for MGM's "The Last Hunt." Note the wooden wedges that



THE TYPE of rugged camera car used for filming chase scenes for "westerns" was used to carry the cameras photographing a steeplechase for Fox.



GEORGE FOLSEY, A.S.C., mounted his camera in stern of grip-controlled rowboat for dramatic scenes for "Many Rivers To Cross."

have been driven beneath the plank track to insure rigidity.

The second photo illustrates the ingenuity that was brought into play for photographing a follow shot on location for the independent production, "Storm Fear," produced by Cornell Wilde and photographed by Joseph LaShelle, A.S.C. Here the Mitchell 35mm camera was mounted on a pair of toboggans lashed together. The cameraman was then towed by grips as he photographed the man approaching on snowshoes.

The next photo shows a 20th Century-Fox camera car shooting a steeplechase scene. This converted automobile has camera platforms fore and aft as well as above the driver's compartment and provides for mounting four or more cameras. Here, two cameras are used to cover the action in medium and closeup shots. Drivers of camera cars are specially trained, know the camera-

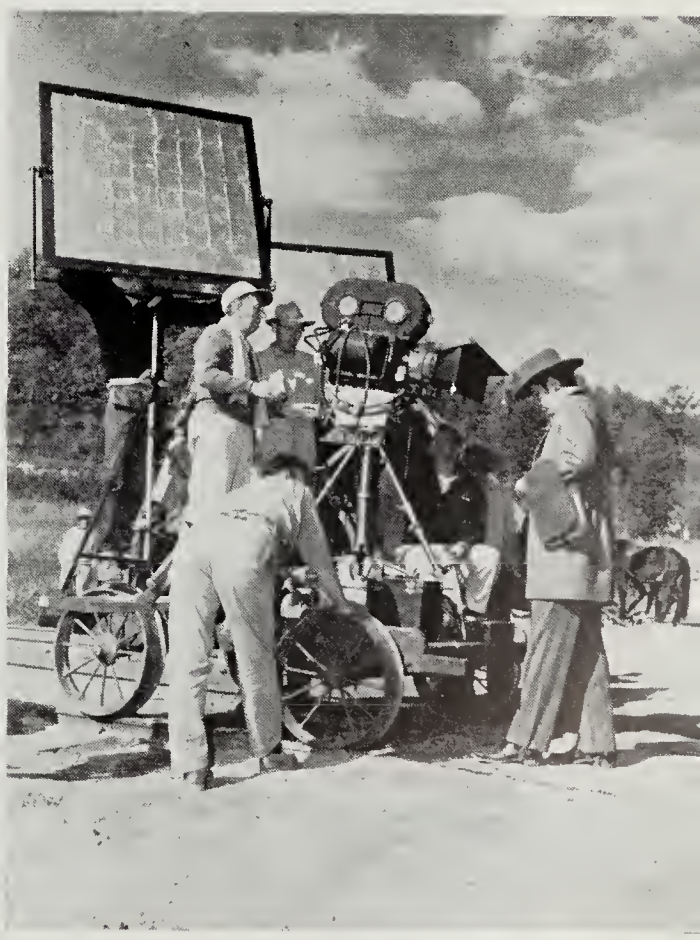
(Continued on Page 444)



MOST DOLLIES will accommodate the camera crew and director as well as the camera.



HELICOPTERS are a popular mode of travel for cameras used in making aerial shots.



TRACK WORKER'S truck became camera dolly for shots for "Great Locomotive Chase."

How To Build A Simple Tripod Dolly

Dramatic moving camera shots possible with this easy-to-build accessory.

By JAMES R. OSWALD

IF YOUR MOVIES lack that "extra something" required to give them professional class, try incorporating a few dolly shots in your next film production. Avoid the monotony of routine, "fixed-position" vantage points, as you move in for a dramatic closeup, follow a person walking down the street, or perhaps just shift around for new camera angles without the nuisance of constantly resetting tripod legs, all with the aid of the economical, easily-built tripod dolly described herein. These intriguing effects, and others, too, limited only by the imagination of the cameraman, are within the grasp of any movie maker who sees fit to devote a little spare time to the venture. And best of all, no special skill whatever is required for its assembly.

The dolly frame consists of regular 1" x 2" screen sash lumber, which, dressed, as procured at any lumber yard, measures approximately 3/4" x 1-3/4." Its construction should

(Continued on Page 443)

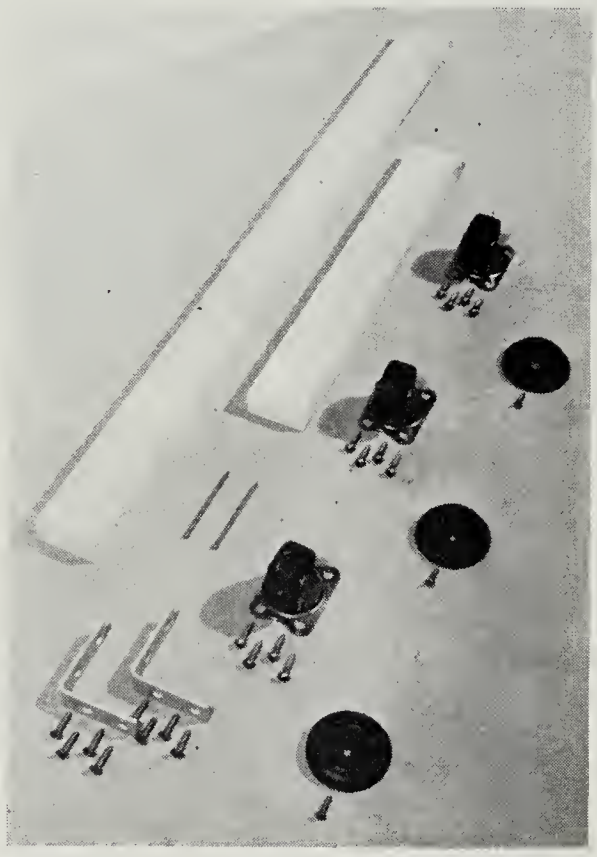


FIG. 1—Only these few, simple parts are required in the construction of the useful, lightweight tripod dolly pictured here.



FIG. 2—First step is to round ends of lumber, then paint or varnish. The two pieces are then nailed to form a "T," as shown in Fig. 5.



FIG. 3—Rubber-tired casters are mounted on the underside at the tips, then rubber caster cups are screwed in place to hold the leg tips.

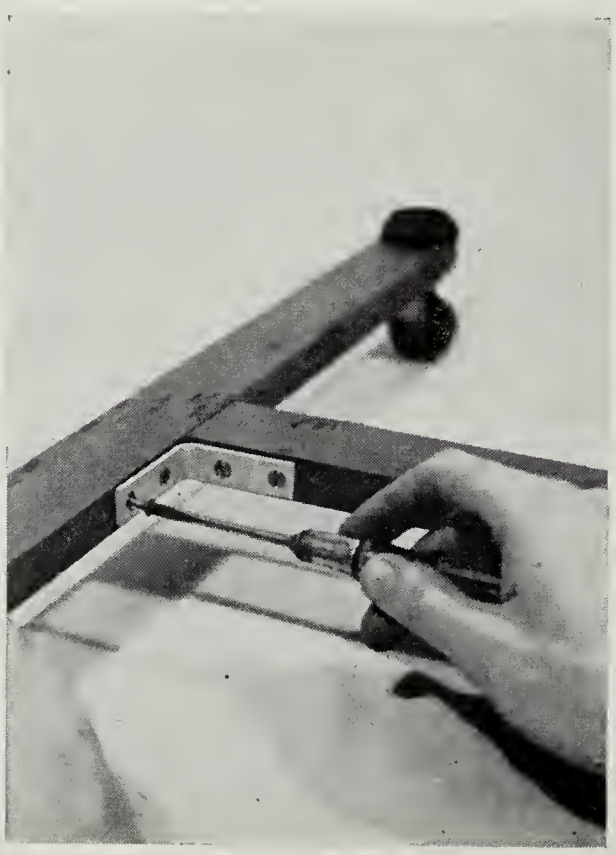


FIG. 4—Angle braces attached at point shown here give added rigidity to dolly, insure its durability in both indoor and outdoor use.



FIG. 5—Completed and ready to roll. Besides providing for dolly shots, gadget enables easier moving of camera from one setup to another.

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LOW CAMERA angle gave this compelling closeup dramatic emphasis in MGM's "The Fastest Gun Alive."

Keep It Close!

How the proper use of closeup shots will give your films more dramatic emphasis.

By HAROLD BENSON

RUN THROUGH your latest film and check the proportion of closeups to the rest of the shots. The chances are you'll find you average less than one closeup in six shots. Yet the closeup is the film maker's greatest gift.

Consider the theatre for a moment. When the stage is filled with players, the producer has to direct the audience's eye by a strict control of grouping and lighting. Even then he cannot guarantee that everyone will concentrate on the right actor at the right moment. The slightest distraction can ruin his effect.

The film director's advantages over his stage counterpart are almost numberless, but the most important is his unique opportunity for insuring that his audience, whether in the front rows or in the back of the balcony, see only what he wishes them to see—and see it from an angle of his own choosing. Too few amateurs appreciate the real value of this control.

We've all sat through hours of amateur productions which seem to have been shot consistently at fifty feet or so from the main action. This sort of treatment reduces a film to a tiresome and frequently meaningless bore. An audience feels cut off from the characters and detached from the action.

When you plan the photography of your next picture, allow for *at least* fifty per cent of closeups. This doesn't mean nothing but facial expressions, of course, though they will probably predominate. Close shots of hands, feet and inanimate objects can be extraordinarily expressive when skillfully used.

Let your mind wander for a moment over a one-word theme. Take, for example, "Holiday." Probably half the images that rush before your mind's eye are closeups. True, you'll probably "see" plenty of distant landscapes and seascapes; but don't you also "see" a handful of sand trickling between fingers, children's feet retreating from an approaching wave and a sandcastle crumbling before the tide?

Details like these linger in your mind because they contain the very essence of holiday atmosphere. Yet they rarely

(Continued on Page 436)



AN INSTRUCTIONAL film on the use of felt letters for classroom art that was enhanced by story-telling closeups, such as the one pictured below.



THE CAMERA moved in close to show how the felt letters stick readily to the felt background, and are easily removable—a detail that could not be emphasized in any other way.

ANIMATION WITH THE ARRIFLEX-16

(Continued from Page 416)

The problem and a simple design were taken to Mr. Adolph Gasser, a very fine camera craftsman in San Francisco, who further refined the idea to produce a device of extreme simplicity. It consists of a set of three-to-one reduction gears attached to a brass band fitting neatly around the motor speed control dial of the Arriflex. These gears are operated by a small handle having click stops to indicate the open and closed positions of the shutter. The unit is attached to the camera motor by first adjusting the shutter to the closed position, easily located (when the camera is loaded) through the direct view finder, which has a narrow band across the mirror surface to reduce the flutter effect during filming. When this band bisects the image in the finder, the shutter is exactly in the middle of its closed position and the animation device, with its handle in the closed position, can then be placed on the motor and locked into place by a small screw. One half turn of the handle then opens the shutter, another half turn closes it.

The only alteration to the camera itself is the replacement of the shutter control knob on the motor by the small reduction gear, a change that can be made easily at any time with a small screw driver. We have found no reason for removing the reduction gear for normal shooting when once set in place. There was some inconvenience in the manufacture of the unit due to the fact the camera was milled to the metric system, but any good craftsman should be able to overcome this difficulty. The cost of making such a unit should fall below $40, dependent upon the quality of workmanship.

Exposures are determined by the diaphragm, duration of illumination as set on the Time-o-lite, and by the distance of the lights from the cell. Variations in color temperature which might result from extremely short exposures where the cooling light bulb may still exert effect, can be overcome by increasing the length of exposure, and if necessary, by the use of filters. In black-and-white, of course, this is of no importance.

A further refinement of the device, which we have not found necessary, but which might be desirable for any organization doing a lot of animation, would be a switch on the gear which would automatically turn the house lights off and on as the shutter is opened and closed. We may build this addition yet, the supreme luxury on a device which has already saved us over four hundred dollars. **END**

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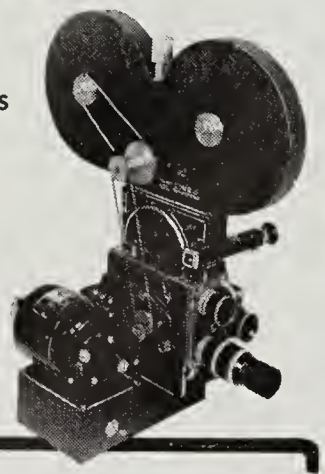
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PUTTING THE EDGAR BERGEN TV SHOW ON FILM

(Continued from Page 421)

that more time is required to make a light change than when floor units are used. However, Clark now has the lighting pattern so worked out that little if any change is made during a show or from week to week. One bugaboo does prevail, however, and that is the ever-changing intensity of the incandescent lamps used. Because the lights burn for long periods at a time—are not shut off and re-lit frequently as in usual studio production practice—they gradually diminish in intensity and have to be replaced. A very close check therefore is kept on the illumination at all times.

One other lighting problem is ever-present, according to Clark, and that is the one posed by the clothing worn by the various contestants. This is an important factor that always must be taken into consideration if the photography is to be acceptable; and as there are two to four pairs of contestants taking part in each show, the lighting must be flexible enough to accommodate all. Each Tuesday evening before the show begins, the contestants that are to take part come to the stage where they are briefed on how and when to enter, and where to stand with respect to the microphones. This gives Clark opportunity to observe the skin tones and wearing apparel of each and to arrange cues for any light changes that may be necessary when they appear before the cameras.

Clark has taken a great deal of pains to achieve pleasing lighting of the set's background. He uses cukalores abundantly to enhance the lighting pattern here which, at the same time, sets off the sponsor's name which hangs promi-

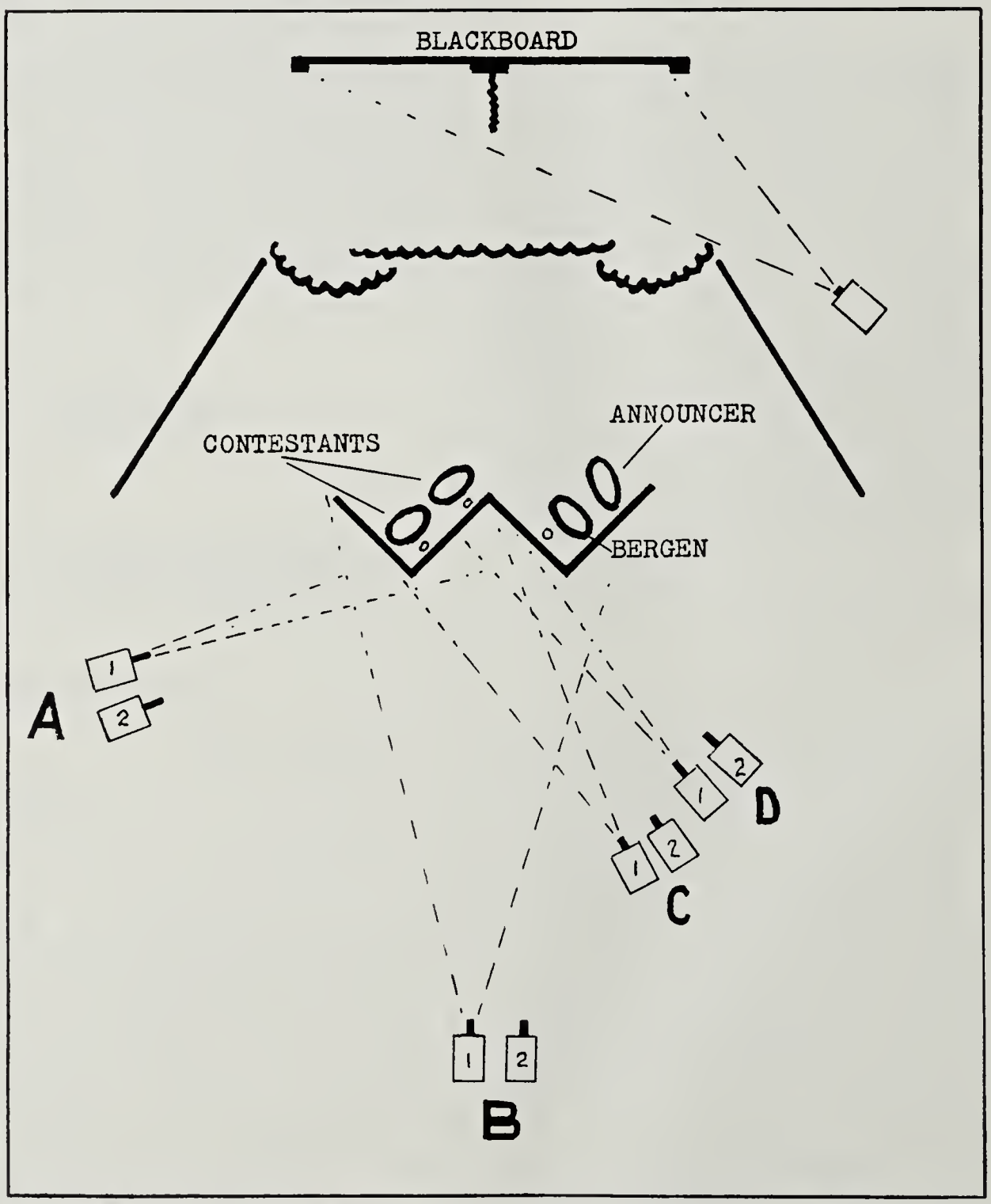
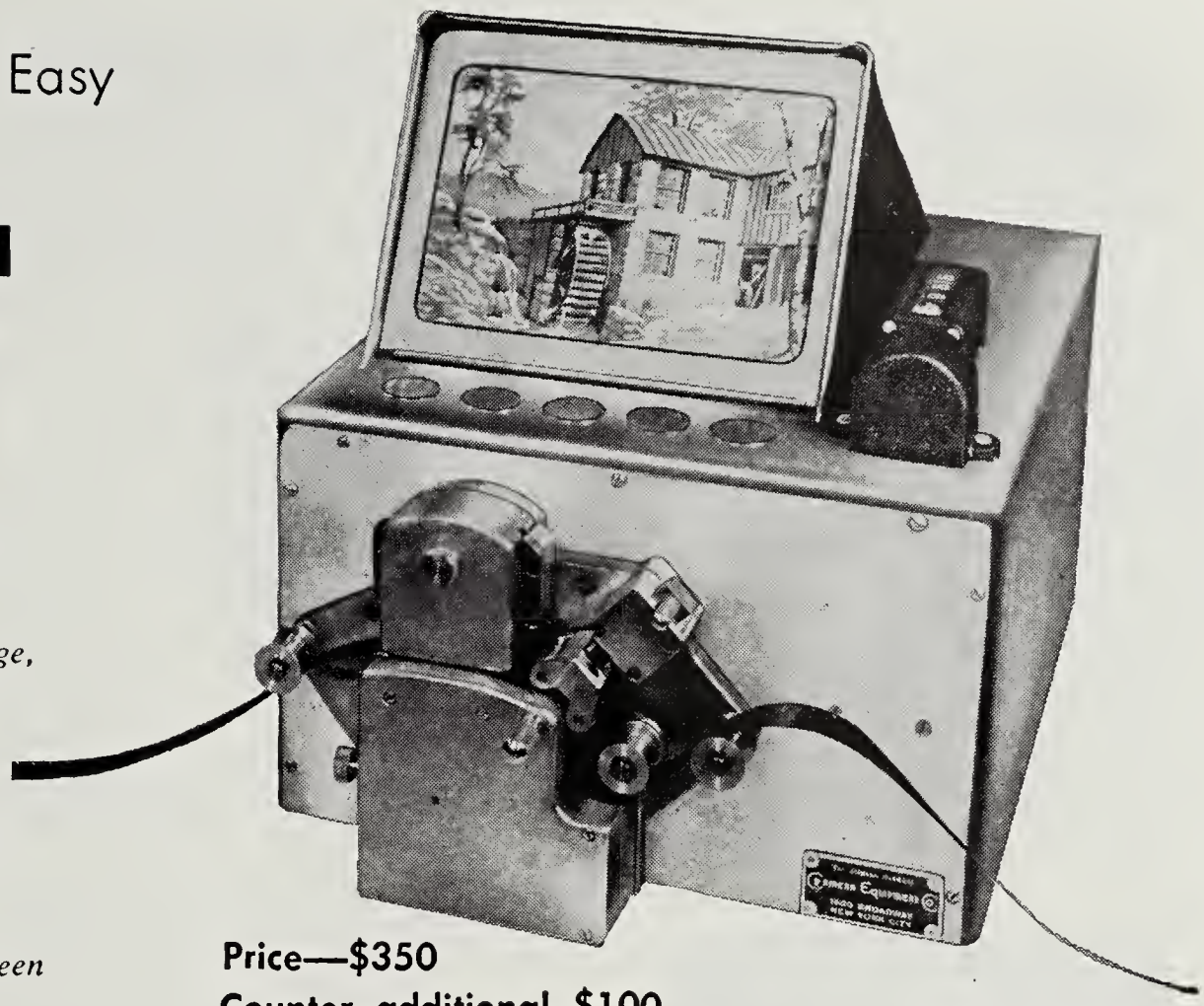


DIAGRAM shows positions of the nine cameras used in photographing the Edgar Bergen TV show, "Do You Trust Your Wife?" There are four groups of 2 cameras each. One camera in each group is always shooting; 2nd camera takes over when 1st camera reaches end of roll of film. Each camera group has a particular function and the coverage is shown by broken lines.

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nently above the set. Incidentally composition of the lettering in the sponsor's name panels (there are two, alternating every other week—Frigidaire and L & M Cigarettes) creates no small problem in lighting. The letters are coated with reflective material to enhance their brilliance, and the set lighting has to be precisely adjusted in order to prevent glare from the panels reaching any of the camera lenses.

Any notable changes that Clark makes in the lighting has to be carefully charted for the reason that there are invariably pickup shots to be filmed after each show for shows filmed a week or several weeks earlier. Because any change in the lighting of such shots would show up sharply when contrasted with the rest of the show's footage, Clark always refers to his lighting log for that specific evening and makes sure that the same lighting pervails for shooting the pickup shots.

Pickup shots are those filmed after the main show has been photographed and replace takes that include "boo-boos" or mistakes by Bergen, announcer Lemond or the contestants. Most pickups are shot in closeup to make it easy for the film editor to intercut them into the show in the most unobtrusive manner. Unlike with theatrical motion pictures, when anyone on the "Do You Trust Your Wife?" show forgets a

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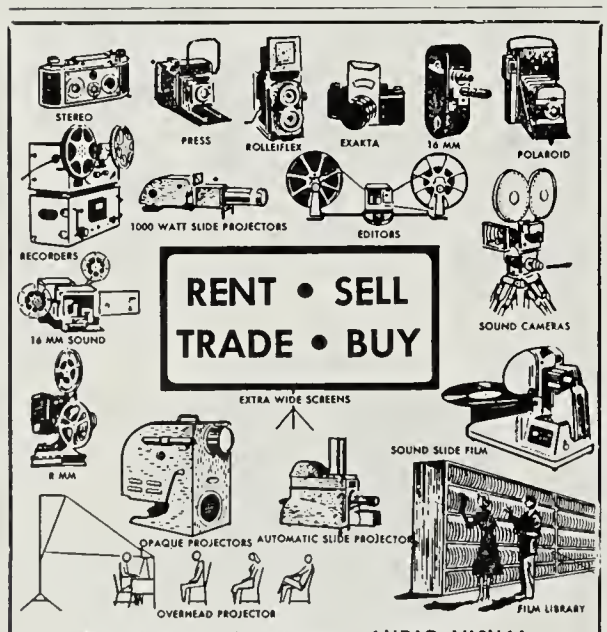
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word or a line or otherwise makes an error, the cameras keep right on rolling and the show goes on. Pickup shots filmed later take care of such errors.

Right now Edgar Bergen, Dan Clark, director Jim Morgan and all the others who work together to put this rollicking TV program on film each week are on vacation. The show resumes shooting late in August when the company will begin filming the 14 shows remaining on its 1956 schedule.

In the meantime, it can be expected that Director of Photography Dan Clark will have some new ideas for further enhancing the photography.

"Our next major improvement," he says, "is to acquire T-stop lenses for all our cameras. With the cameras thus equipped, we can insure uniformity in all nine camera negatives: lighting values and meter readings will then be valid for all. Without the use of T-stop lenses, such uniformity is impossible in a multiple-camera undertaking."

On this proposed improvement Edgar Bergen heartily agrees. An avid photography enthusiast and no mean cinematographer himself (Bergen owns several profesional 16mm and 35mm cameras; is also a member of the A.S.C.), his understanding of the director of photography's problems has made it easier for Clark to achieve the success that he has in putting "Do You Trust Your Wife?" on film.

KEEP IT CLOSE!

(Continued from Page 432)

find their way into holiday films. And this is equally true of the atmospheric closeups of almost any setting.

Close shots tend to be regarded as useful only for "shock" cuts or reaction cutaways. Actually this last use emphasizes why few closeups are ever wasted, while long shots often have to be relegated to the waste bin if they're not to upset the balance of the film. There is practically always some place for closeups, even if its not quite the spot that was originally intended.

For instance, you may shoot a scene for a drama at a fairground stall: A man studies the ticket which may win him a substantial prize. While the pointer spins, he drums his fingers on a ledge.

Perhaps when you come to edit this sequence you find that you have plenty of material to build up tension by cutting between the man, the prize, the pointer and onlookers. A big closeup of drumming fingers might make the sequence too heavy for a comparatively minor plot incident.

But this is just the kind of closeup that has a hundred uses. Instead of dismissing it as wasted, file it away among your stock shots. Eventually you'll find a need for it. A husband waits for his wife. You've taken shots of him looking at his watch and pacing up and down, but you haven't enough material of sufficient variety to intercut with the shots of his wife as she hurries towards their rendezvous. If you haven't thrown those drumming fingers into the waste bin, here's an ideal chance to use them.

Alain Pol, the talented French director, has made a twenty-minute short which tells the story of a man's entire life solely through shots of hands. His "Jeux des Mains" takes the idea rather too far, of course. Nevertheless, it does prove the extraordinary power of the closeup, and confirms that the face is not necessarily always the truest guide to emotion.

A girl is being questioned by her father. He demands an answer again and again. She looks blank, expressionless. What is she thinking? Her face may disguise her thoughts, but her hands, twisting at a handkerchief, clenching a fist or digging the nails into her own flesh, can provide the clue. Here the closeup is all-important.

But such examples, you may be thinking, are special cases which do little to justify the contention that at least half the shots in a film should be closeups. Let's break down an imaginary sequence from treatment into shooting-script and see how essential close shots can be if interest and tension is to be maintained.

George Brown returns home late one evening after several drinks with his friends. As he approaches the house, he notices a light in his window. When he bursts in he discovers two strangers sitting in his chairs, smoking his cigarettes and drinking his whisky.

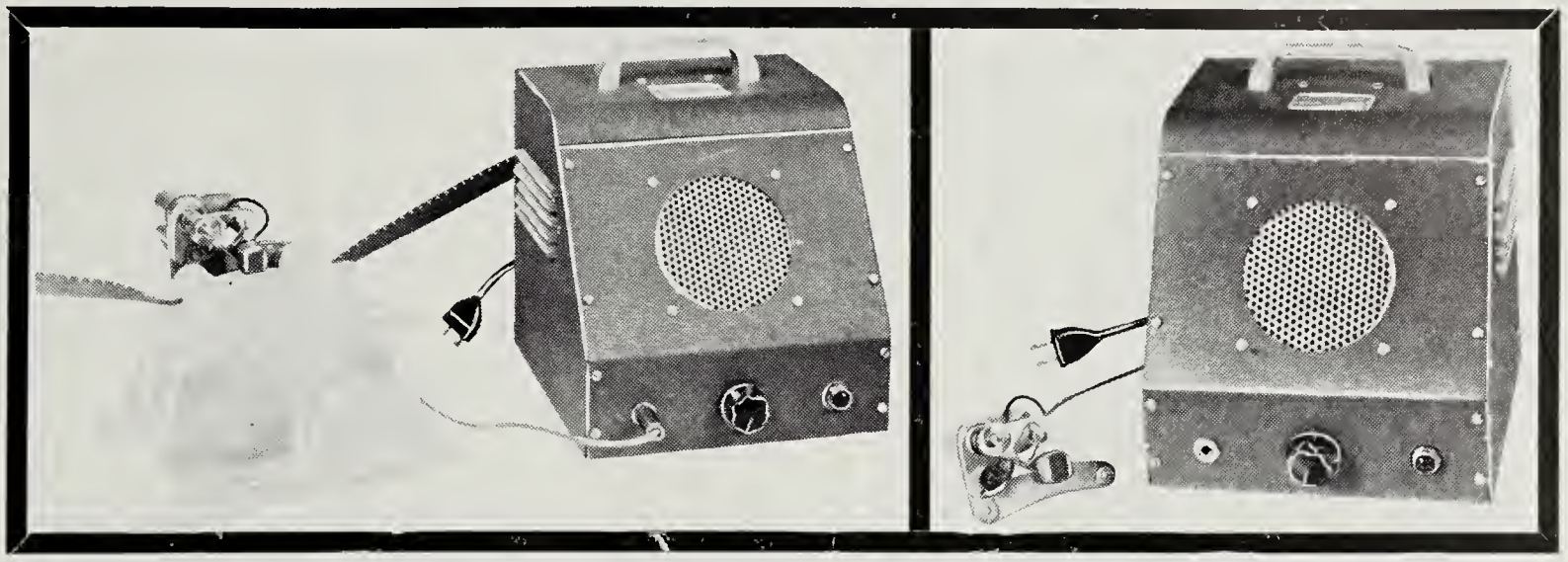
So much for the treatment. (No, don't ask for the explanation. I don't know the answer—but the situation might well bear developing into a short comedy, or perhaps a thriller.) Let's start the shooting script where George leaves his friends to return home. Let's assume, too, that this is the opening sequence of the film, and that no details about George or his home have yet been established.

Opening shots are almost traditionally long shots. The most notable exceptions are the openings of G. W. Pabst's films, where he usually selects one significant detail in a set or location, opens with it and gradually discloses the rest of the scene. But the more orthodox

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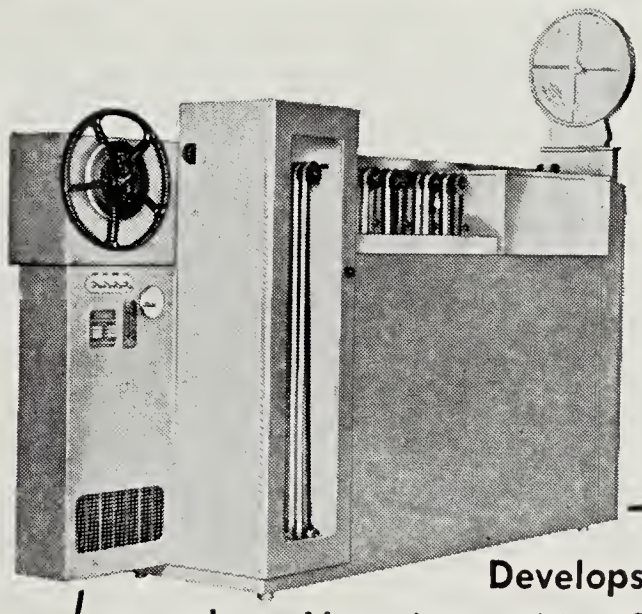
convention is the L.S.—M.S.—C.U. routine, which at once establishes scene, characters and details in that order.

Here the best opening shot is probably a L.S. of George silhouetted in a lit doorway, waving goodnight to his friends. The door shuts and we cut to a C.U. of George's face, lit by the light shining through the glass panel of the door. His smile fades. Another C.U. shows his fingers fumbling for a cigarette. He drops the packet.

In M.S. George goes down on his hands and knees to search. A facial C.U. shows him muttering to himself. In the next C.U. we see his hands groping clumsily along the path.

Back to a M.S. as he straightens up, a little uncertainly, still without the cigarettes. He walks out of frame, equally uncertainly. A M.S. panning to L.S. as he turns out of the gate shows him guiding himself by patting the hedge with one hand as he ambles away from the camera.

A C.U. of a cat nestling on top of the hedge. George's hand enters the frame and lands squarely on the back of the cat, which scurries off in alarm. A quick C.U. of George's startled face as he reacts—then a M.S. as he steps hastily back and tries to pull himself together. He tugs a handkerchief from his pocket. As he does so an envelope flutters to the ground. *(To Pg. 438)*



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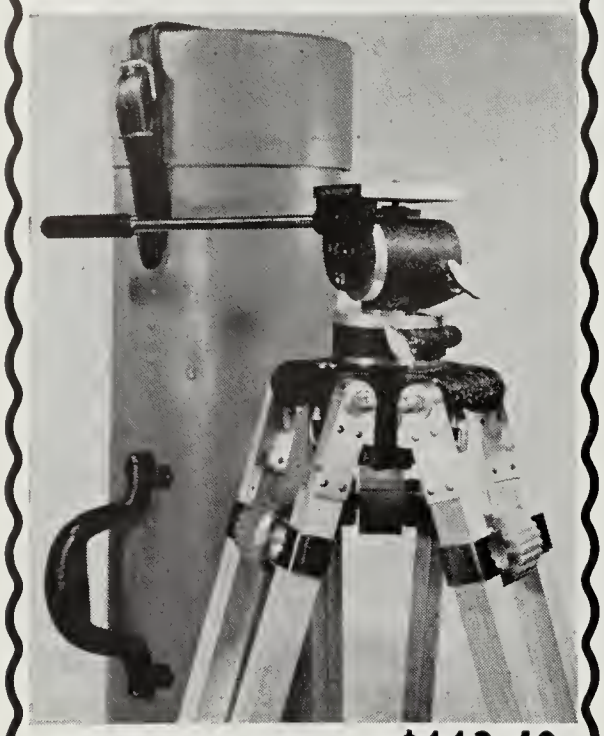
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A C.U. of the torn envelope discloses George's name and address. His house number is 134. George's hand enters frame and retrieves the envelope. Another M.S. shows him tucking it back in his pocket and setting off once more in the same direction. A C.U. of the gate number 134 pans to a L.S. of George approaching, still none too certainly. As he reaches C.U. position, he stops with his hand on the gate, gazing beyond it.

A M.S. shows a lit window. George, in C.U., looks bewildered. He approaches the door (L.S.), and stares hard at the number (C.U.). Eventually he reaches for his keys (C.U.) unlocks the door and enters (C.U.).

A C.U. of an interior door being opened discloses, in L.S., a man and girl talking earnestly. George looks more mystified than ever (C.U.). He studies the man (C.U.) and the girl (C.U.) Suddenly he looks indignant (C.U.). He stares at the glasses on the table (C.U.), the bottle (C.U.) and the cigarette box (C.U.). He frowns (C.U.) and approaches angrily, but neither seem to notice him (L.S.).

Out of these thirty shots, nineteen are straightforward closeups, five medium shots, three long shots, and three vary from one to another. Yet it is doubtful whether an audience would remark on the prepoderance of closeups. A director would, in fact, find it difficult to over-use close shots here.

Here even medium shots and long shots should be close—close enough, that is, to show essential action without letting the background distract. Beginners frequently dwarf their characters by keeping them in the middle of the frame. Each time you line up for a long or medium shot, take a look around the extreme edges of the finder. If what you see is unnecessary to the scene, get in closer. Remember, audiences want to get right in to see what's going on. Keep in close and you'll keep them happy.

THE DEPTH OF FIELD OF CAMERA LENSES

(Continued from Page 424)

square of the focal length. This argument takes no account of the fact that the size of the image varies with the focal length, and that a smaller circle of confusion is required for comparable quality in a small picture than in a large one. Furthermore, the lack of depth of field is seldom troublsome when the camera is focused on an object at the hyperfocal distance, but rather when it is focused on a nearby object. Under the latter conditions, the quantity r in the denominator of equations (1) and (2) becomes negligible ccmpared with the quantity mp. Hence equations (1) and (2) become simply

$$d_1 = \frac{rP}{mp} \qquad (7)$$

and

$$d_2 = \frac{rP}{mp}; \qquad (8)$$

and the total depth of field is

$$d = d_1 + d^2 = \frac{2rP}{mp}. \qquad (9)$$

The ratio P/p in the above equation can be transferred to corresponding quantities in the image-space by means of the well-known relationship in optical theory that

$$m = -\frac{pP'}{p'P},$$

where P′ is the distance of the film from the exit-pupil of the lens and p′ is the radius of the exit-pupil. Equation (9) may then be re-written as follows:

$$d = d_1 + d_2 = \frac{2rP}{m^2p'}. \qquad (10)$$

Now, any comparison of the depth of field of two lenses must be made on a basis that insures the same exposure in both cases, since manifestly any desired depth can be obtained by reducing the lens aperture. It is a well-known fact that the amount of illumination on the film in the image of an extended object is determined by the ratio P′/p′.[1] Assuming a constant value for this ratio, the depth of field is seen from equation (10) to vary directly with the permissable size of the circle of confusion r and inversely as the square of the magnification. This result is independent of the particular form of the lens. In other words, *any claim that one lens has a greater depth of field than another is absurd.* If experimental tests seem to indicate a difference between lenses, either the two lenses were not used at the same effective aperture and magnification, or the image quality of one is inferior to that of the other and its depth only appears to be greater.

The lack of depth of field is apparent to the motion picture audience when the size of the circle of confusion on the screen exceeds a certain limiting value. Let us designate by R the radius of the largest permissible circle of confusion on the screen. Then

$$R = r m_P m_S,$$

where m_P is the magnification between

the negative and positive in printing (in contact printing this quantity is 1) and m_s is the magnification of the film on the screen in projection. Substituting for r in equation (1), we have

$$d = \frac{2R}{m^2 m_p m_s} \cdot \frac{P'}{p'} . \qquad (11)$$

Let us assume now an object or actor of height h in the plane on which the camera is focused. The corresponding height of the image on the screen is

$$H = h m m_p m_s . \qquad (12)$$

Let us designate the over-all magnification between the object and its screen image by M, where

$$M = \frac{H}{h} = m m_p m_s . \qquad (13)$$

With this substitution, equation (11) becomes

$$d = \frac{2R}{mM} \cdot \frac{P'}{p'} . \qquad (14)$$

We see, therfore, that for a fixed value of R and P′/p,′ the depth of field, as seen by the audience, varies inversely as the original magnification in the camera and the over-all magnification M. In other words, it is just twice as hard to obtain sufficient depth when the actor's head is to be ten feet high on the screen as when it is only five feet high. The advantage of making m small will be dealt with presently.

Let us consider the case of standard 35mm practice where both the negative and positive film are of this width and the printing is done by contact. Equation (14) shows that, for a fixed over-all magnification M, there is a definite gain in making the magnification m, in taking, as small as possible. This implies either using camera lenses of short focal length or placing the camera at a great distance from the actors. For the same over-all magnification M, equation (13) shows that m_s must be increased in proportion to the decrease in m.

In other words, the greatest depth of field is seen to result by making the original negative with as low a magnification as possible and relying on subsequent enlargement to provide the required over-all magnification. The

(Continued on Page 442)

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EDITING TECHNIQUE FOR TV FILMS

(Continued from Page 427)

on some other appropriate action or object. This will permit "parallel" cutting, "cutting back" or other editing techniques.

4. In the case of so-called demonstration films, the demonstrator must synchronize word and action, in the sense that what he is saying is appropriate to what he is doing. For instance, if there is a tendency to "telegraph" the next important action by talking about it before actually doing it, editing difficulties may arise. Thus, it might be desirable to go to a closeup of a certain action only to find that the accompanying commentary is about something else to come. One will be completely inappropriate to the other.

Experience has shown that it is often very difficult to match short sections of "lip sync" portions of 35mm negative and 16mm reduction work print. This is especially true in cases where the action is very limited and where the actor tends to speak in such a way that lip movements are not clearly defined. Much to one's chagrin, these portions of a film may be found slightly out of sync in an answer print.

A little trick that will overcome this that is definitely worth the slightly extra cost is to edge-number in sequence, by hand, the selected "lip sync" takes only. Starting with the closed clapstick frame, the numbers are scribed or inked every foot or so in the sound track area of the 35mm negative. A second reduction print of the selected takes is made on 16mm single-perforated stock. While in the printing process all sound apertures are kept open so that the scribed numbers will register on the print. These numbers are then used for matching purposes.

Some producers may find it economical and convenient to record sound on 16mm tape, shoot on 35mm film, make a 16mm reduction work print and then edit picture and track in 16mm. Negative matching is then done between the 35mm original and the 16mm work print. For spot commercials, which are not long, this method has some economic advantages. The major difficulty comes during the matching process because the work print, being a reduction print, will not have edge numbers which can be used as a matching aid.

The procedure described below substitutes a "mechanical" method of matching for one of "matching by eye," which is always tiring and very readily subject to errors. For this two 16-35 synchronizers are needed. A specially designed one in which two 16-35 sections can be coupled or decoupled when desired is a very desirable instrument for this purpose.

In editing, all cuts are made in a splicer without losing frames. The head and tail trims are kept at hand in a barrel and are marked to match the adjacent frame in the work print, for quick identification, as shown in Fig. 1.

When the negative is to be matched to the cut work print, the head trim of the first scene, which will have the "clapstick" on it, is placed in the 16mm channel of one synchronizer and the negative in the 35mm channel, in sync, by lining up the "closed clapstick" frames. The two are run down until the end of the trim is reached. The corresponding frame line on the negative is scribed. The next frame will correspond to the first frame of picture in the work print. The work print is now inserted in this first synchronizer (the trim is run out) with the first frame of picture in sync with the scribed frame of the negative. The negative may be cut and spliced on to prepared leader. The work print and negative are in sync and are run down to the next splice on the work print. The negative corresponding to this frame is scribed and the synchronizer is locked in place.

The head trim of the next scene and the matching negative are placed in the second synchronizer or in the second section of the decoupling 4-way described above. Again, the two are rolled down in sync to the tail of the head trim and the next frame on the negative (first frame of the scene coming up in the work print) is scribed. The negative of the previous scene is run out of the first synchronizer and that of the second scene replaces it. Making the match at this point is simply a question of lining up the splice in the work print with the scribe mark on the frame line in the negative. The negative sections can be spliced immediately, or cut and taped for splicing later. This process is repeated for each scene or for each section of a scene, if there has been any cutting back or intercutting. If care has been taken that no frames were lost in cutting and that all ends of scenes and trims have been correspondingly marked for easy identification, there should be no difficulty in maintaining a mechanical synchronization, and the negative should be perfectly matched to the work print.

This system of matching is especially handy where the only action is that of speech, in which case matching by eye is especially difficult; or where the difference in action between frames is so slight that it is practically impossible to determine by eye.

PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 398)

● Harold Wellman, ASC, "Wyatt Earp," TV, (Desilu Prods.) with Hugh O'Brien. Frank McDonald, director.

PARAMOUNT

● Ernest Laszlo, ASC, "The Loves of Omar Khayyam," (Technicolor; VistaVision) with Charlton Heston, Anne Baxter and Gilbert Roland. William Dieterle, director.

● Lionel Lindon, ASC, "The Lonely Man," (Technicolor; VistaVision) with Jack Palance and Elaine Aiken. Henry Levin, director.

● Daniel Fapp, ASC, "Hollywood or Bust," (Technicolor; VistaVision) with Dean Martin, Jerry Lewis and Pat Crowley. Frank Tashlin, director.

● Sam Leavitt, ASC, "Flamenco," (VistaVision and Color) (Being photographed in Spain.) Don Siegel, director.

● Jack Warren, ASC, "Search for Bridey Murphy," (VistaVision) with Teresa Wright and Louis Hayward. Noel Langley, director.

● Ray June, ASC, "Funny Face," (Technicolor; VistaVision) with Audrey Hepburn and Fred Astaire. Stanley Donen, director.

● Charles Lang, ASC, "The Rainmaker," with Burt Lancaster and Katharine Hepburn. Joseph Anthony, director.

● Loyal Griggs, ASC, "The Buster Keaton Story," (VistaVision & Technicolor) with Donald O'Connor and Ann Blyth. Sidney Sheldon, director.

REPUBLIC STUDIOS

● Ed Colman, ASC, "Dragnet," TV, (Sherry Prods.) with Jack Webb. Jack Webb, director.

● Bud Thackery, ASC, Kaiser Aluminum commercial, TV, Pete Adrian, director: 7-Up commercial, TV. James Hogan, director.

● Herb Kirkpatrick, "The Millionaire," TV, (Don Fedderson Prods.). Sobey Martin, director.

● Walter Strenge, ASC, Cheer commercial. Bud Springsteen, director.

● John Russell, ASC, "Soldier of Fortune," TV, (Revue Prods.) Richard Irving, director; Jane Wyman Show, TV, with Jane Wyman. Sid Lanfield, director; 7-Up commercial, TV. James Jogan, director.

● Lester Shorr, ASC, "General Electric Theatre," TV, (Revue Prods.). Robert Stevenson, director.

● Daniel B. Clark, ASC, "Do You Trust Your Wife?" TV, (Don Fedderson Prods.) with Edgar Bergen and Charlie McCarthy. Jim Morgan, director.

● John Seitz, ASC, "Buffalo Grass," (WarnerColor) with Alan Ladd and Virginia Mayo. Gordon Douglas, director.

PATHE RKO

● George Diskant, ASC, "Four Star Playhouse," TV, (Four Star Prods.). Various directors; "Hey, Jeannie!" TV, (Jeannie Prods.) with Jeannie Carson and Allen Jenkins. Les Goodwins, director.

RKO

● Paul Vogel, ASC, "Public Pigeon Number One," with Red Skelton and Vivian Blaine. Norman McLeod, director.

● Joseph Biroc, ASC, "Run of the Arrow," (Eastman Color; Wide screen) (shooting at St. George, Utah) with Rod Steiger and Sarita Montiel. Samuel Fuller, producer-director.

● William Snyder, ASC, "Bundle of Joy," (Eastman color; wide-screen) with Eddie Fisher and Debbie Reynolds. Norman Taurog, director.

● William Skall, ASC, "The Day They Gave Babies Away," (Eastman Color; Wide-screen) with Glynis Johns and Cameron Mitchell. Allen Reisner, director.

HAL ROACH STUDIOS

● Jack Mackenzie, ASC, "Code 3," TV. Various directors.

● Edward Fitzgerald, ASC, "The Charlie Farrell Show," TV, with Charles Farrell. Rod Amateau, director.

● Paul Ivano, "Stories of John Nesbitt," TV, with John Nesbitt. Various directors: "Screen Directors Playhouse," TV. Various directors; "The Gale Storm Show," TV, with Gale Storm and ZaSu Pitts. Alex Gottlieb director.

SUNSET STAGE

● Ray Fernstrom, ASC, State Farm Mutual Insurance commercial, TV, (5 Star). Lewis Harot, director.

20TH CENTURY FOX

● Wilfred Cline, ASC, "The Last Wagon," (DeLuxe Color; CinemaScope) (shooting at Sedona, Ariz.) with Richard Widmark and Tommy Rettig. Delmar Daves, director.

● Leon Shamroy, ASC, "Best Things in Life Are Free," (Technicolor; CinemaScope) with Gordon MacRae and Sheree North. Michael Curtiz, director.

● Leo Tover, ASC, "Between Heaven and Hell," (Technicolor; CinemaScope) with Robert Wagner and Terry Moore. Richard Fleischer, director.

● Joe MacDonald, ASC, "Teenage Rebel," (DeLuxe Color-CinemaScope) with Ginger Rogers and Michael Rennie. Edmund Goulding, director.

● Walter Strenge, ASC, "Stagecoach to Fury," (Regal Films) (CinemaScope; black & white) with Forrest Tucker and Mari Blanchard. William Claxton, director.

● Jack Hildyard, "Anastasia," (Deluxe color; CinemaScope) (shooting in London) with Ingrid Bergman and Yul Brynner. Anatole Litvak, director.

UNIVERSAL - INTERNATIONAL

● Arthur Arling, ASC, "Tammy," (Technicolor: CinemaScope) with Debbie Reynolds and Leslie Nielsen. Joseph Pevney, director.

● Clifford Stine, ASC, "The Incredible Shrinking Man," with Grant Williams and Randy Stuart. Jack Arnold, director.

● Russel Metty, ASC, "Mister Cory," with Tony Curtis and Martha Hyer. Blake Edwards, director.

● William Daniels, ASC, "Interlude," (CinemaScope - Technicolor) (shooting in Munich) with John Allyson and Rossano Brazzi. Douglas Kirk, director.

● Maury Gertsman, ASC, DuPont commercial, TV, with Frank Leahy. Wil Cowan, director; "The World and Little Willie," (Technicolor) with Maureen O'Hara and John Forsythe. Jerry Hopper, director.

● Scotty Welbourn, Falstaff beer commercial, TV. Jack Daniels, director.

● Irving Glassberg, ASC, DeSoto commercial, TV. Wil Cowan, director; Musical short with the Jerry Gray orchestra. Wil Cowan, director.

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● Robert Burks, ASC, "The Wrong Man," (Alfred Hitchcock Prod., shooting in New York City) with Henry Fonda and Vera Miles. Alfred Hitchcock, director.

● Floyd Crosby, ASC, "The Old Man and the Sea," (WarnerColor; wide-screen) (shooting in Cuba) with Spencer Tracy. Fred Zimmermann, director.

● Ted McCord, ASC, "The Girl He Left Behind," with Tab Hunter and Natalie Wood. David Butler, director.

● Harold Rosson, ASC, "Anthology Series," TV, wth Kati Freeman and Don McGowan. Rodger Ray, director.

● Harold Stine, ASC, "Cheyenne," TV, with Clint Walker and Faye Spain. Lester Martinson, director.

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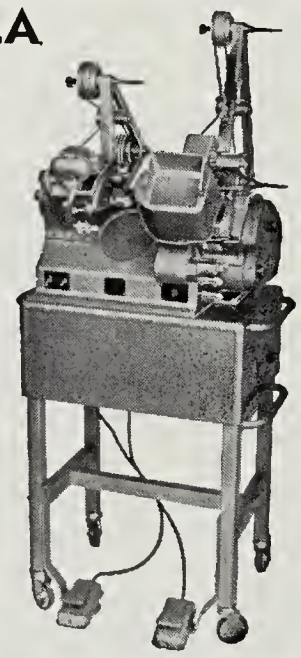
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DEPTH OF FIELD

(Continued from Page 439)

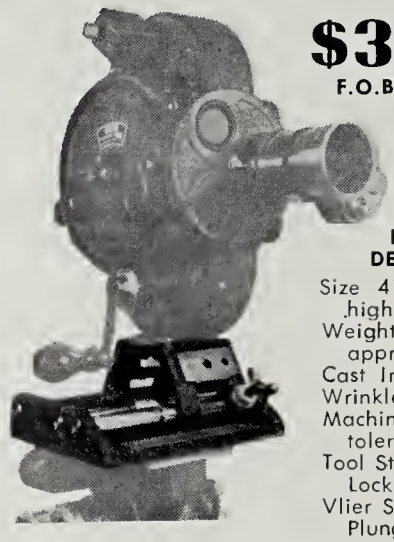
limit to the subsequent enlargement is set by the graininess of the negative material. Unfortunately, this limit has been reached with 35mm negative film, as the magnification in the projector is already so high that any further increase makes the graininess decidedly objectionable. We must conclude, therefore, that the depth of field for a given effective lens aperture P'/p' is about as great as it can ever be made with 35 mm film unless the graininess of the film can be reduced enough to permit greater magnification in projection.

Let us now consider the effect of making the original negative and release prints on a wider film. For the sake of convenience, let us assume the film to be 70mm in width, or twice as wide as the 35mm standard. There are several possible ways of utilizing this increased width, but most producers seem to regard the wider film as an opportunity to include more action on a larger screen, the size of images on the screen remaining approximately as at present. If this plan is followed, it is obvious from equation (14) that the depth of field with wide film, at the same over-all magnification M and the same magnification in projection, is identical with that obtained in 35mm practice. This implies the use of camera and projector lenses of the same focal length as at present. If, on the other hand, larger images are projected on the larger screen, the increased over-all magnification M can be obtained only by increasing either m or m^s. It is impossible to increase m^s without increasing the appearance of graininess. Hence, any increase in M must be the result of increasing m, and equation (14) shows this procedure will decrease the depth of field. This is not exactly true, because a somewhat larger circle of confusion can be tolerated with a larger screen. Nevertheless, the fact remains that larger images on the screen are obtainable only by sacrificing depth of field.

Consider now the case where the negative is 70mm in width and the release prints are 35mm in width, the printing being done by optical reduction. Since the quantity m_P in equations (12) and (13) does not appear in equation (14), it follows that this reduction process neither increases or decreases the depth of field when the other conditions are met—that is, when the same magnification m is used in the camera and a final image of the same size is projected on the screen. Equation (13) shows that when m_P is one-half, as it is approximately under these conditions, the

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magnification in projection ms must be twice as great to keep the over-all magnification M the same. It is claimed, with some justice, that this reduction process reduces the graininess and that the magnification in projection ms can therefore be increased over what is possible when the print is made by contact. If the reduction in graininess is one-half, so that the magnification in projection can be doubled, the depth of field of pictures produced in this way is the same as with the two methods that have been discussed previously. It may be remarked in passing that it is no more difficult to design a projection lens to cover 35mm film than one to cover the 70mm film if they are of the same relative aperture, But, with the same relative aperture, the illumination on the screen with the 35mm film will be approximately one-fourth as great.

SUB-ZERO CAMERA OPERATION

(Continued from Page 415)

permit re-threading, and was not replaced for the H & D test. The camera was then allowed to stand with the base heaters operating but without the insulating protection or heat of the blanket. It took only 7 minutes to make camera operation impractical! The heating blanket was again put on, the crew removed and the refrigeration controls set for —35°. After 15 minutes in this man-made blizzard (blowers in the chamber circulted the air very rapidly to facilitate the heat transfer) it was obvious that the heaters and insulation were quite adequate for the temperatures we expected to meet. However, it was desirable to test temperatures exceeding our requirements, so the refrigeration controls were set for —50°. Fourteen minutes at this setting indicated that the camera insulation and heating equipment were still adequate. The crew then re-entered the chamber and shot another R & D focus test.

These tests and data are far from exhaustive, but they did give us sufficient information to allow us to approach our sub-zero location with reasonable confidence.

A brief analysis of the data and some general observations may be of interest.

All temperatures are expressed in degrees of Fahrenheit.

Heating pads were especially important to the lens mount, tachometer and motor. (The lens mount actually froze at one time while the heating pad was removed.)

The film was very "tender" and tore very easily at —20°. At —43° it was checked (several pieces were left out and exposed to the frigid air in the chamber) and was found to be very brittle! It shattered like glass.

There was a very definite gamma loss at approximately —20°. A slight loss in color saturation could be expected to accompany this gamma loss. An exposure correction is also indicated.

The motor cables were frozen stiff at —40°. The use of military cables designed for use at these temperatures would be desirable at such extremes.

The camera lens focus was apparently not affected.

No static was observed.

The camera gear head froze up. The use of "aviation grease" is necessary.

The Universal finder and the glass filter in front of the lens both frosted up when warm damp air entered with the camera crew. The lenses and the filters must therefore, be very carefully watched.

The current drain on the camera heating units never at any time exceeded 7 amperes (at 110 volts). Therefore, a 750- or 1000-watt auxiliary generator should be adequate for camera heating.

The battery temperature probably did not fall much below freezing during the test. Insulation against the cold for long exposures is indicated. Heating may be necessary. (The thermocouple in the cover of battery No. 2 was evidently near an air leak in the battery cover, as it usually indicated temperatures very near those of the chamber.)

The lens thermocouple fell off the camera apparently at about 3:10 PM and was not replaced until 3:35 PM. Therefore the lens temperature data recorded between these times is false.

The crew reported that under the blizzard conditions simulated in the cold chamber face masks would be necessary, and pocket warmers for the hands desirable. The new Insul-Air cold weather Pacs made by the U. S. Rubber Co. were most effective.

George and Elmer had cold feet even with heavy socks, boots and overshoes. (Or maybe Gene has warm feet?) You choose your own gear! See you in Alaska (or Colorado) sometime.

TRIPOD DOLLY

(Continued from Page 430)

be of a size tailor-made to the triangular expanse of the particular tripod with which it will be used, the tripod legs being extended sufficiently for rigid camera support. The necessary hardware used in building the dolly (Fig. 1) may be purchased at most hardware, and some 5 — 10 cent stores.

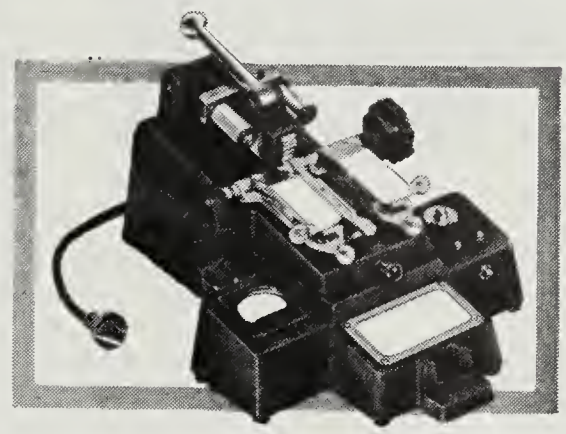
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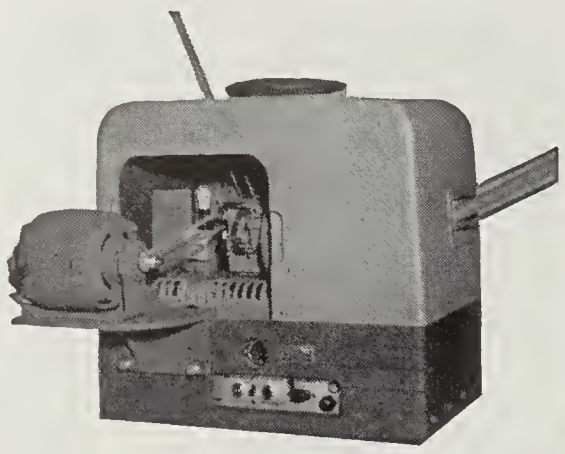
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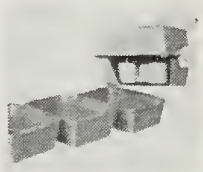
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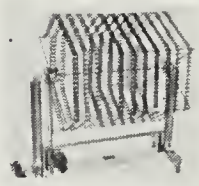
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center to form the equilateral triangle, is cut exactly one-half the length of the cross member to provide the desired symmetry. Rounding out the ends of the boards that form the three "legs" of the frame gives a more professional appearance to the unit, and serves to protect furniture against damaging bumps when the dolly is used indoors. Painting or varnishing is done at this stage (Fig. 2), prior to mounting the various hardware, or, if preferred, after the two sections are nailed together, for which procedure two 2-1/2" casing or finishing nails are used.

After the finish has dried, three rubber-wheeled casters of the flush-mounting type, with wheels measuring 1-1/2" in diameter, are attached to the ends of the dolly frame, directly over which are fastened three rubber caster cups (Fig. 3) into which the tripod legs will nest. These cups have a diameter of about 2" on the outside. Inside they approximate 1-1/4" at the top, tapering to around 3/" at the bottom. A single screw through a hole drilled in the center of each cup holds it firmly in place.

The addition of a couple of angle brackets (Fig. 4) at the joint, previously nailed, will greatly reinforce the unit at this point of strain. With this the dolly is complete and ready to "roll." Used discreetly, and with reservation, as all clever camera effects should be, your movies will now take on a new touch of professionalization, as the cine camera closes in for a screen-filling portrait, backs away for a wider angle of view, or whatever the situation warrants, gliding smoothly over any level surface.

INTERVAL TIMER

(Continued from Page 423)

the vibrator arm of the buzzer. Thus when the timer points make contact, the buzzer operates and drops the mercury switch to start motor. We still have to stop the motor again with the lid back in the open position, so a second mercury switch is wired in parallel with the first. When number 1 mercury switch is dropped the motor starts and turns the disc. Almost immediately number 2 mercury switch is raised to ON position by disc edge. A pin on the disc then knocks number 1 switch back to OFF position, and as the disc continues to rotate, number 2 switch drops into cut-away back to OFF position. (See Figs. 5 and 6).

In Fig. 4 the mechanism to trip the single picture button on the camera can be seen. This arrangement will vary with the type of camera used. We used a bowden cable connected from solonoid to the release mechanism. When the solonoid is energized for a split second, it pulls the cable, releasing a spring-loaded arm connected to camera button. The spring tension can be adjusted to be just enough to release camera button. Too vigorous tension here can seriously damage the delicate camera mechanism.

Another arm on the driving disc is adjusted to quickly tip a micro-switch wired to the solonoid. Or the micro-switch can be mounted on the end of the box and when the lid closes it trips off the switch. If longer intervals than one hour are required for plant growth, another disc can be fitted to the spindle that drives the hour hand of the clock. Thus, 12 pins on this disc would give one-hour intervals; 6 pins two-hour intervals and so on.

Our whole unit is operated on 240-volts A.C. and we believe it to be as simple as it is possible to build this type of equipment. It is entirely automatic. Once the subject is set-up and the unit switched on it operates continuously until it is manually switched off. Wiring diagrams are not given here as we do not encourage novices in electricity to do their own wiring. Where high voltages are concerned (240 volts here in Australia) it is advisable to have a skilled electrician undertake all wiring.

MOVING-CAMERA SHOTS

(Continued from Page 429)

man's problems in this kind of photography and cooperate as a team to get the shots desired.

Making a dolly shot on water is usually accomplished by mounting the camera on a raft or in the stern of a rowboat, as was done in the fourth photo (above) to photograph Robert Taylor swimming a creek for a scene for MGM's "Many Rivers to Cross." Grips on the riverbank handling tow lines held the boat against the river current and controlled its travel as Taylor swam toward it.

The most frequently used camera carrier for travel and dolly shots is the hard-tired dolly operating on a sectional metal track, such as the one shown in the first photo (bottom) on page 429. Here Director Elia Kazan, seated on box on dolly, and members of the crew watch as Eli Wallach and Carroll Baker rehearse a scene for Warner Brothers' "Baby Doll." Director of Photography Boris Kaufman, A.S.C., (behind Kazan) using a viewing filter, checks the lighting as he prepares to shoot the scene following the rehearsal. As the players move, the camera will be moved toward them. Note guide stick extending from dolly toward players (but out

(Continued on Page 446)

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MOVING-CAMERA SHOTS

(Continued from Page 444)

of camera range) enabling them to keep proper distance from camera.

Helicopters are finding increasing use as camera transports in Hollywood production and enable a cameraman to get shots that would be impossible with any other type of aircraft. In the middle photo (bottom of page 429) George Folsey A.S.C. with his CinemaScope camera mounted in a helicopter, swoops low on three hard-riding Early-West figures on horseback for a dramatic scene for MGM's "The Fastest Gun Alive."

The third photo in this group shows Charles Boyle, A.S.C. and his camera crew preparing a trucking shot with the Mitchell camera mounted on an ancient flange-wheeled railway truck for scenes for Walt Disney's "The Great Locomotive Chase." Reflectors erected on tripods and mounted on the car at rear provide booster light.

Among the unsung heroes of the dolly shots are the grips who must know how to precisely move a dolly at the speed demanded by the particular scene to be filmed, and the camera assistant whose duty it is to change focus whenever there is a change of distance between the actors and the camera during a dolly shot. Sometimes this is worked out in advance and cue marks established, but very often it is a matter of good judgement—a good eye for distance. While it is the Director of Photography who plans such shots, it is the grips and the assistant on whom successful execution of the dolly shot depends. In some of the major studios certain grips have become so expert at handling camera dollies, cranes, etc., that their services for this work are in almost constant demand.

When moving camera shots are to be made on location, very often the Director of Photography must improvise some means for accomplishing it, as in the case of the shots made with the tobogganS and the row boat described above. Vehicles commandeered for making such shots that were not originally in the script range from a child's express wagon to a Mexican ox-cart. Ed Phillips mounted his CinemaScope camera in the nose of a racing car for thrilling action shots for "The Racers." Charles G. Clarke, A.S.C. mounted his camera on a speedy locomotive to make dramatic scenes for a short subject picturing scenic Italy. And a rocket ship installation is already being planned for follow shots of the maiden flight of the first space ship to leave the earth for a distant planet.

BULLETIN BOARD

(Continued from Page 396)

Moon;" Robert Surtees, ASC, "Raintree County," Kentucky; Paul Vogel, ASC, Wings of Eagles," Florida; Russ Harlan, ASC, "Something of Value," Africa; Joseph Ruttenberg, ASC, "The Vintage," France; and Robert Bronner, "10,000 Bedrooms," Rome.

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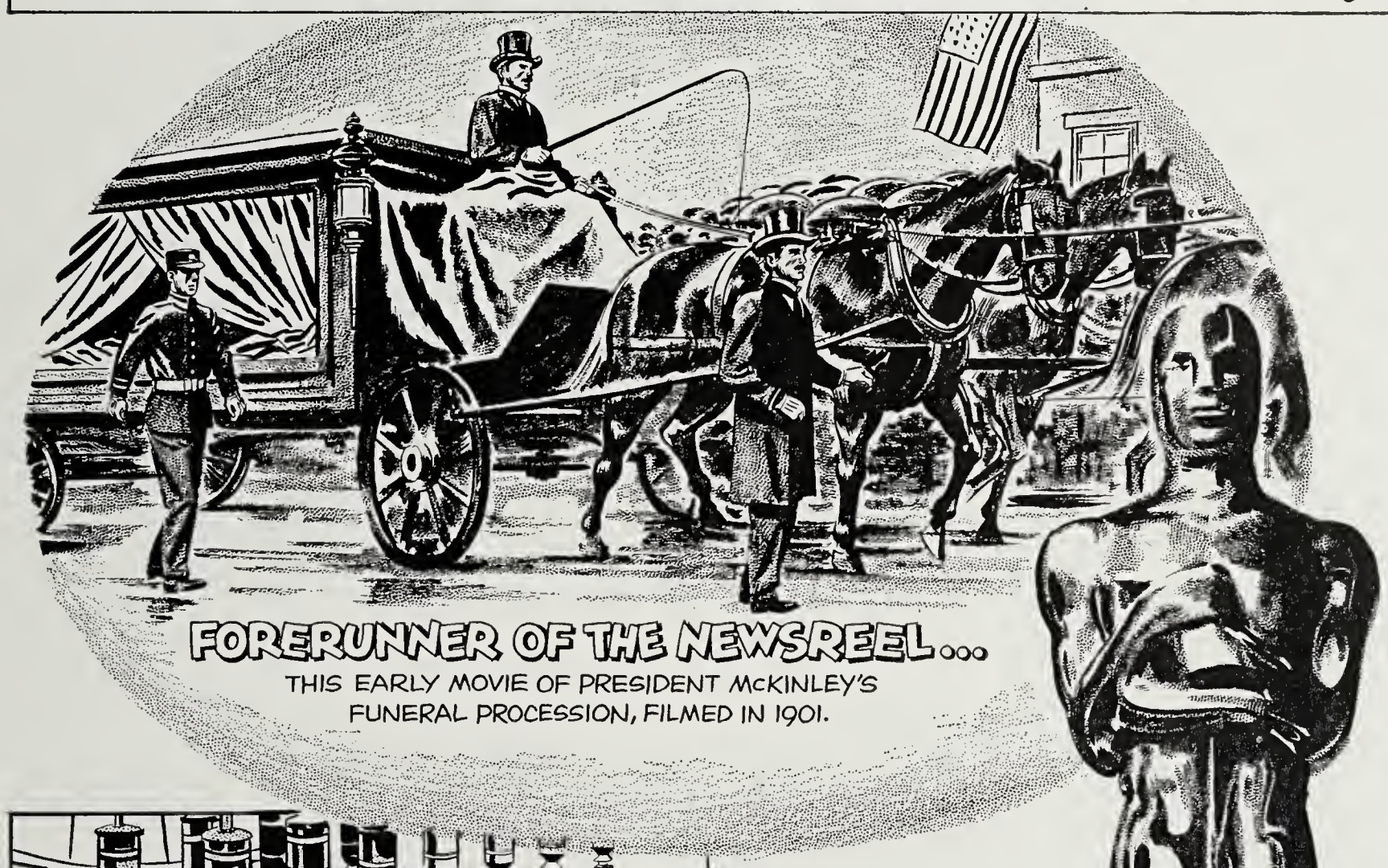
Purchase of Circle Film Laboratories, 33 West 60th Street, New York, N. Y., is announced by Fred Todaro. Company will hereafter be known as Criterion Film Laboratories, Inc.

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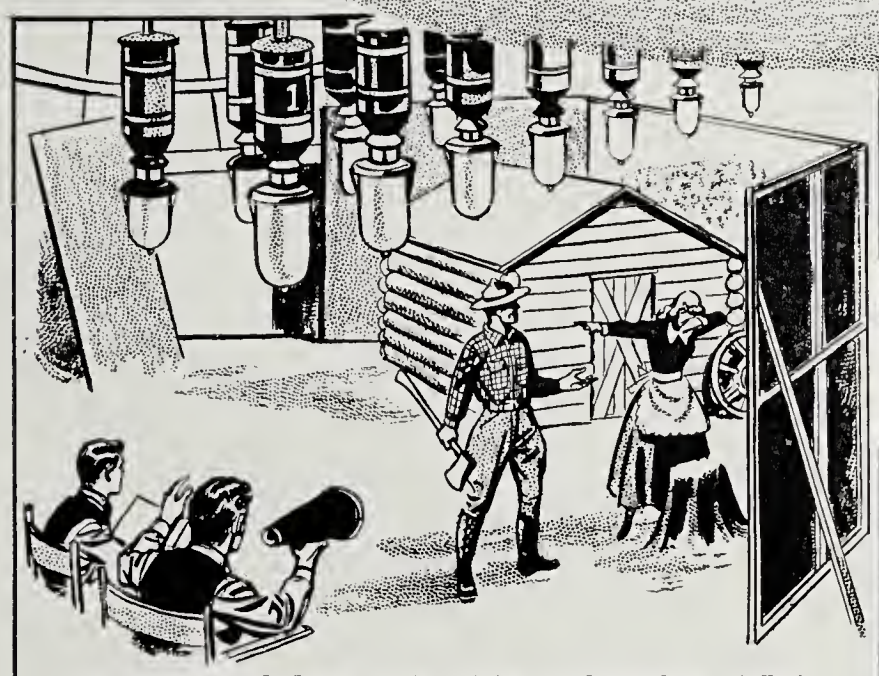
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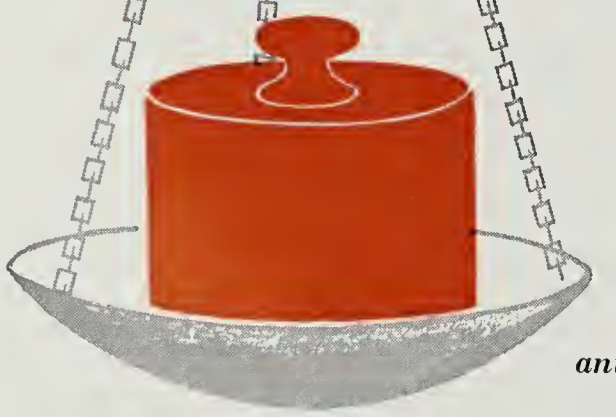
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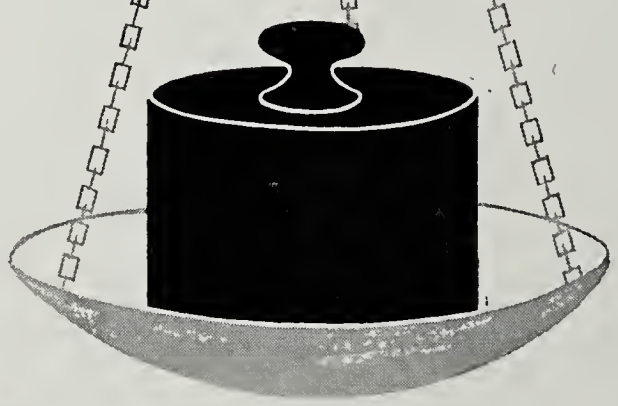
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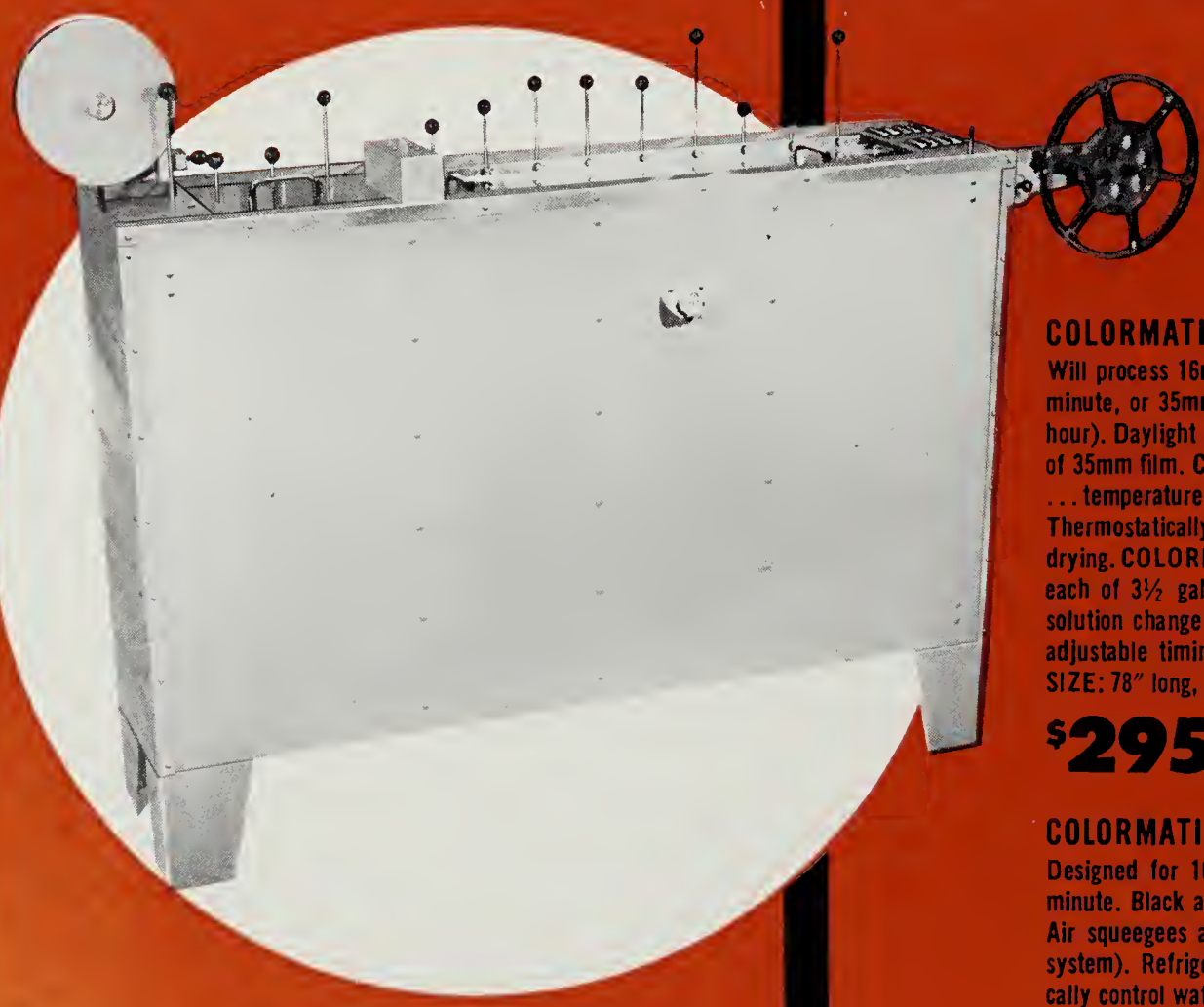
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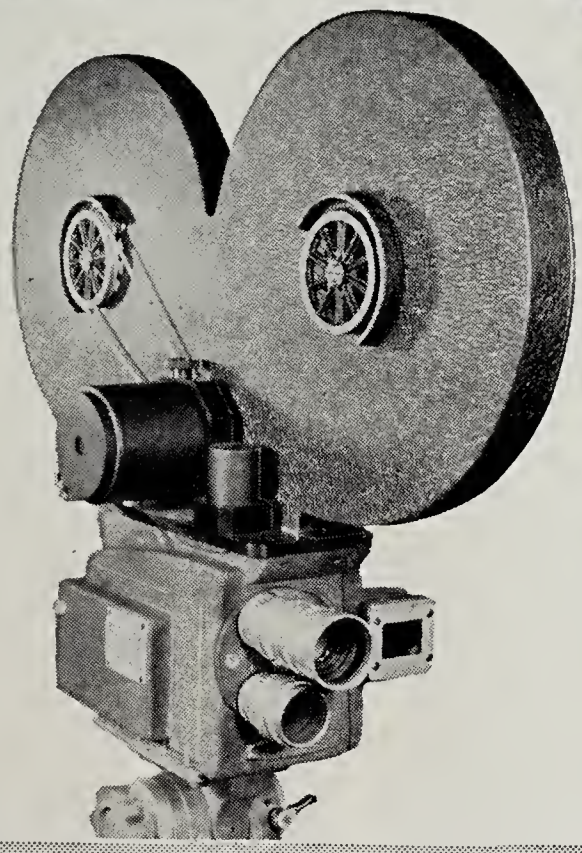
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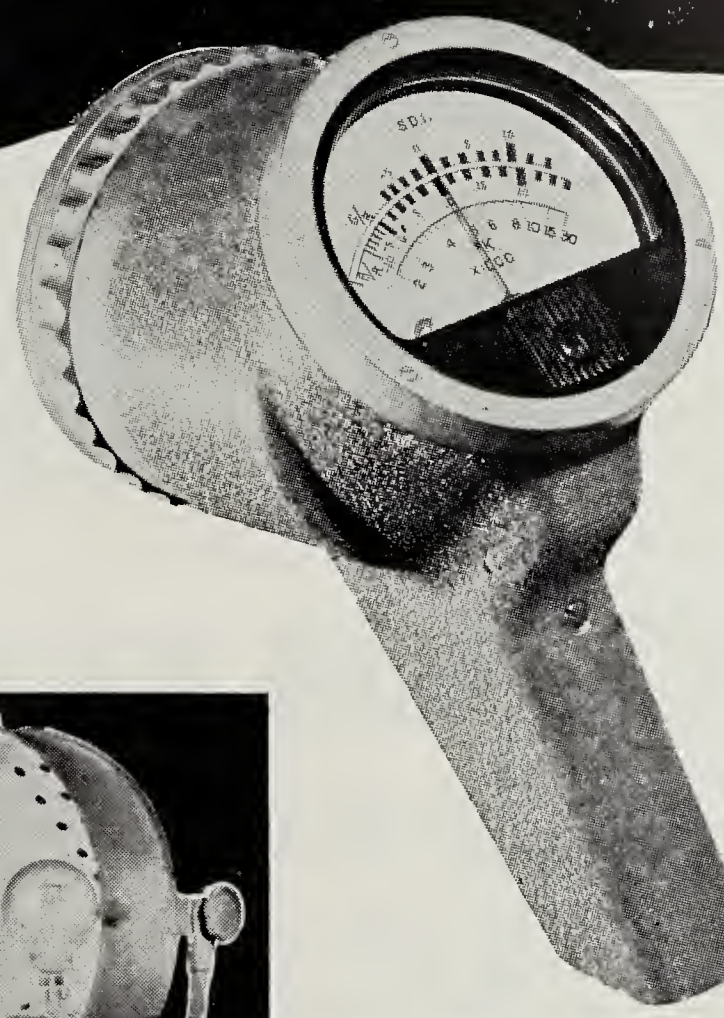
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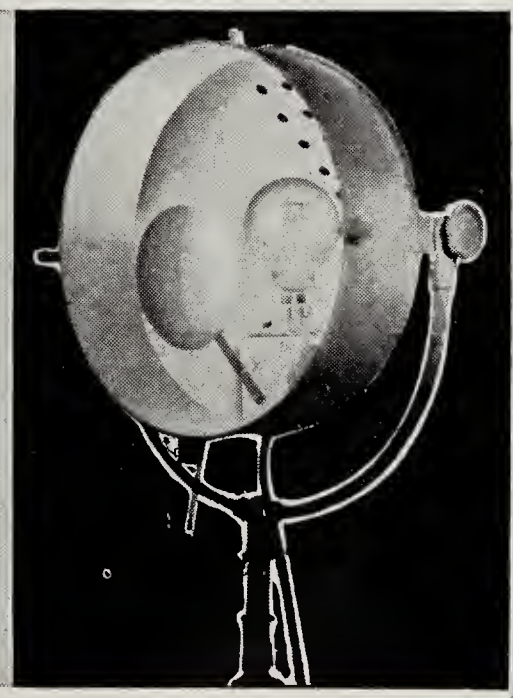
Includes torque motor for magazine takeup. This precision conversion permits attachment of 400 ft. magazine (11 min. running time) or 1200 ft. magazine (33 min. running time). Includes installation of Veeder footage counter. We convert your present Cine Voice or supply you with unit already converted for use with external magazines. Conversion-less magazines $450.00 Positive turret-type Viewfinder with parallax adjustment installed for small additional charge.

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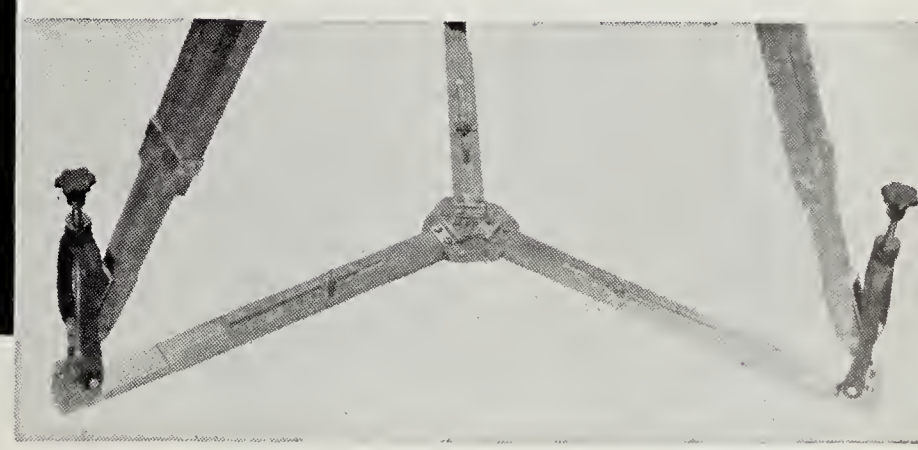


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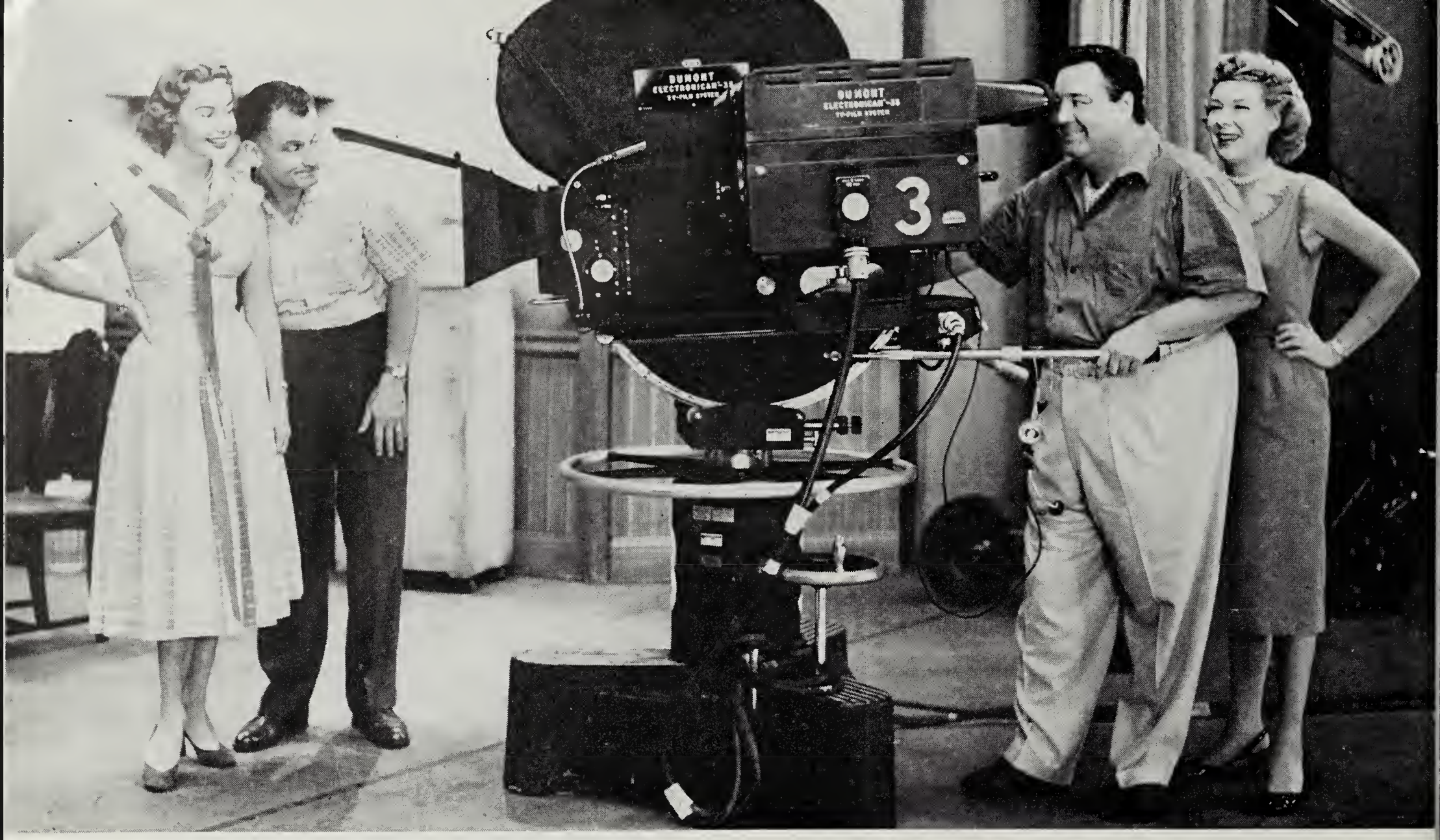
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JACKIE GLEASON'S "HONEYMOONERS" is filmed by Du Mont Electronicam System which incorporates an especially designed and adapted 35mm Mitchell movie camera. Here are Jackie Gleason and Joyce Randolph, right, peering through the camera lens at Audrey Meadows and Art Carney.

NEW ELECTRONICAM REDUCES SHOOTING TIME

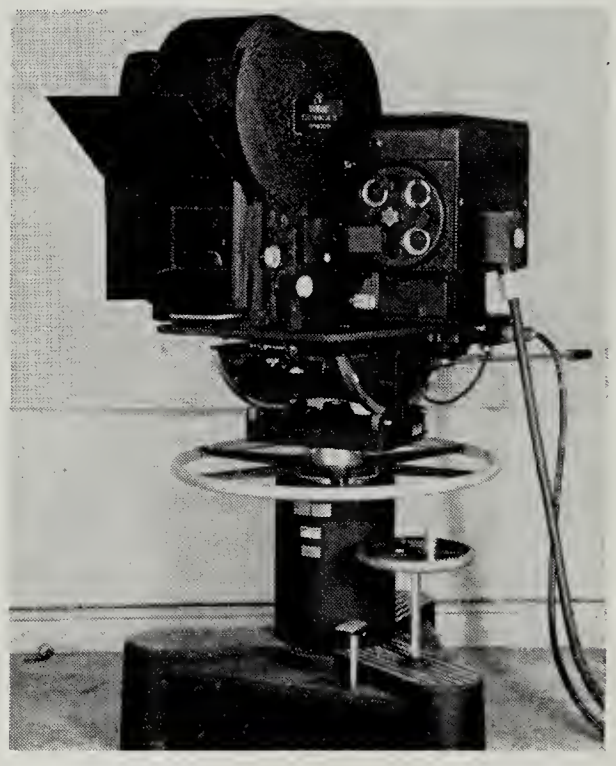
Du Mont's Video-Film System incorporates both Mitchell 35 mm film camera and TV camera

First to use a video-film system in major TV film production is Jackie Gleason's popular show "The Honeymooners." In going "live on film," Jackie Gleason makes use of the new Du Mont Electronicam System, which combines advanced TV techniques with highest quality 35mm photography.

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Complete information on Mitchell cameras is available upon request on your letterhead.



Du Mont Electronicam pick-up; Mitchell 35 mm film camera on left, TV camera on right.

***85% of professional motion pictures shown in theatres throughout the world are filmed with a Mitchell**



Scene from "The Honeymooners" shows Jackie Gleason and Art Carney on set before three pick-up units of Electronicam System. Each pick-up unit has both TV camera and specially designed Mitchell film camera.

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AMERICAN

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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EDITORIAL ADVISORY BOARD: Arthur C. Miller, Ray Rennahan, Arthur Edeson, Walter Strenge, Joseph Biroc.

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VOL. 37 AUGUST • 1956 NO. 8

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ON THE COVER

DURING REHEARSAL of scene for Regal Films' "Stagecoach To Fury," camera crew on boom overhead lines up camera for most advantageous coverage of action. Photo also shows location of microphone and some of the lamps that were used to illuminate set, simulating daylight. Director of Photography was Walter Strenge, A.S.C., whose story on how picture was photographed begins on page 472 of this issue.—*Photo by Cliff King.*

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Canada, $4.00 per year; Foreign, including Pan-American Union, $5.00 per year. Single copies 35 cents; back numbers 40 cents; foreign single copies, 40 cents; back numbers, 45 cents. Advertising rates on application. Copyright 1956 by A. S. C. Agency, Inc.



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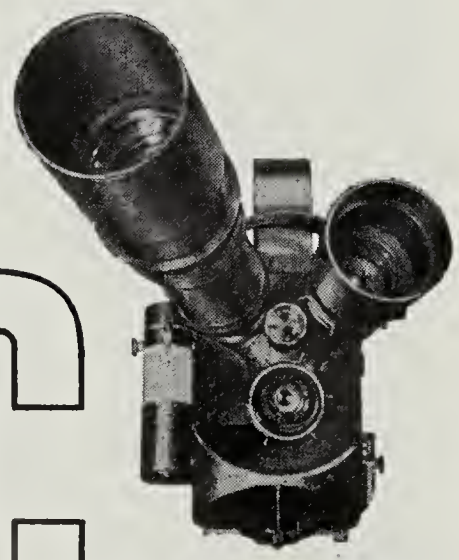
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HOLLYWOOD BULLETIN BOARD

News briefs about the A.S.C. its members, and important industry personalities



ART DIRECTOR Bill Ehnen (left) and ASC President George Folsey discussed proposed modernization and refurbishing of the ASC Clubhouse at Society's July meeting.



HARRY WILD, ASC, stops to chat with W. J. German's Harry Pratt at ASC's July dinner-meeting. Others, from left to right are: Len Roos, Ernest Miller, and Clark Ramsey. Following the dinner, a print of "Moby Dick" was screened.

The ASC, last month, admitted to Associate Membership in the Society Jack Goetz, of Consolidated Film Industries; Allan Haines, of Pathe Laboratories, Inc., and John J. Kowalak, of Ansco.

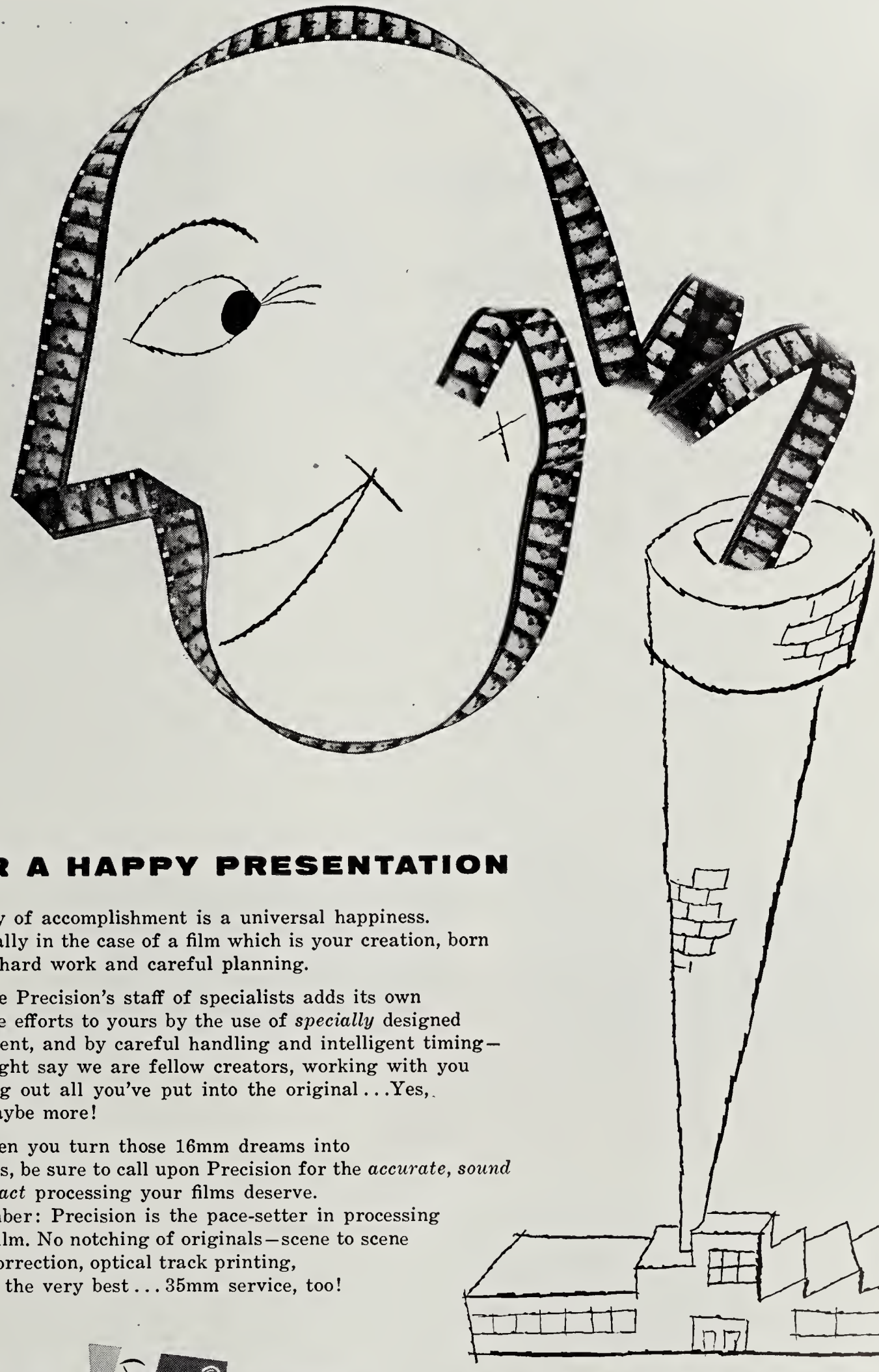
• • •

Frank Zucker, president of Camera Equipment Company, New York, and a member of long standing in the A.S.C., was a Hollywood visitor last month. Annual visit was to renew old friendships and to acquire newly developed motion picture equipment for distribution by his company.

• • •

Arthur Feindel, it turns out, is real monicker of cinematographer "Jockey"

(Continued on Page 456)



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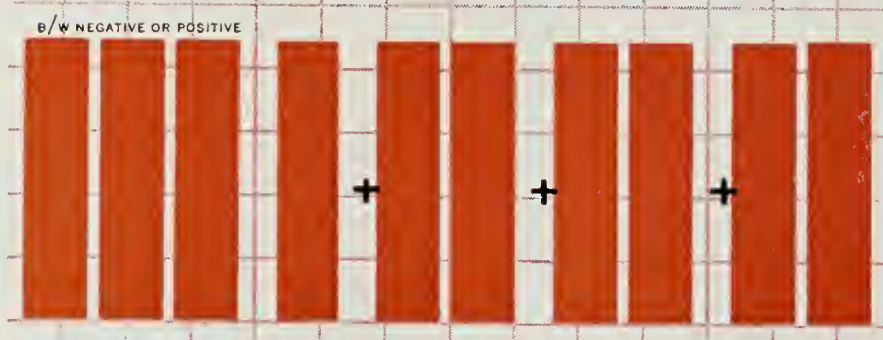
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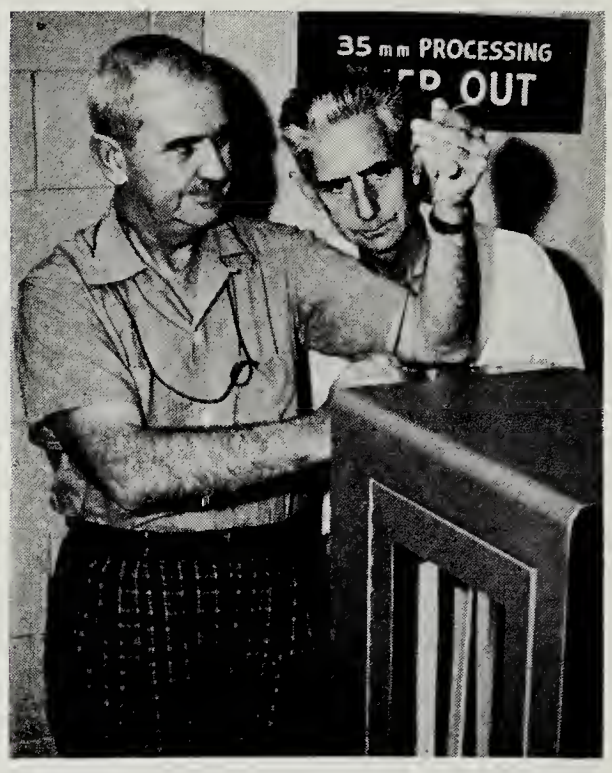
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BULLETIN BOARD

(Continued from Page 454)



BURNETT GUFFEY, ASC, (left) hopes to repeat his Academy Award photography on his current assignment, "End As A Man," Sam Speigel production. It is first major production to be filmed entirely in Florida. Here Guffey looks over some footage processed in laboratories of Shamrock Film Studios, Winter Park, Florida, where interiors of "End As A Man" are being shot.

Feindel, who was admitted to membership in the A.S.C. recently.

• • •

The Motion Picture Association of America reports that the proportion of color films to all films made in the U. S. during 1955 dropped for the first time since color first became a factor in feature film production.

Report shows that there were 154 color features produced last year, or 50.5% of a total of 305 pictures that received the Production Code Seal. In 1954, there were 176 color films, or 58.1%—an all-time high for the industry.

A major contributing cause to this downward trend has been the successes of such black-and-white films as "On the Waterfront," "From Here to Eternity," and more recently, "Marty."

• • •

Acclaimed finest underwater color cinematography of any motion picture made to date is "The Silent World," photographed over a two year period by Frenchman Jacques-Ives Cousteau, and screened before members of the A. S. C. at the Society's June meeting. Picture demonstrated unusual results obtainable by strobe-lights in underwater cinematography. — END



American Cinematographer has consistently surpassed all other publications in the amount of advertising carried on film production equipment and services. Advertisers — large and small — know from experience that American Cinematographer produces the best results — gives the most returns per advertising dollar.

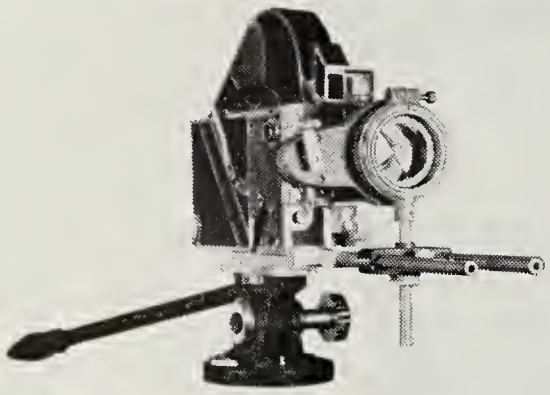
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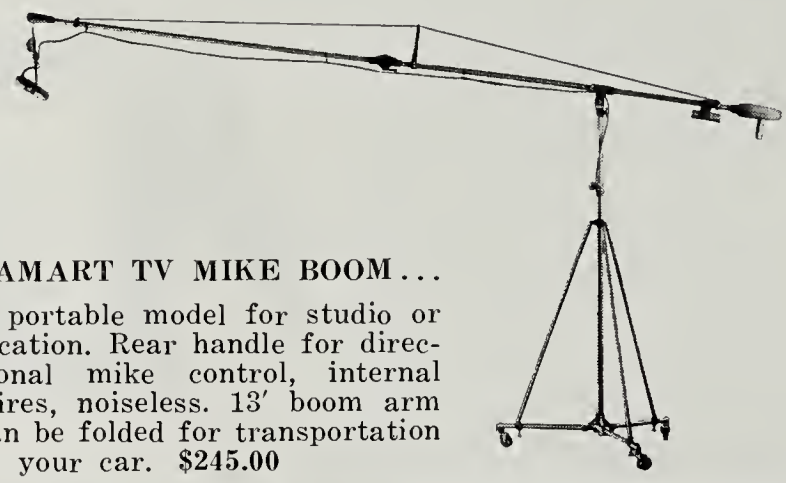
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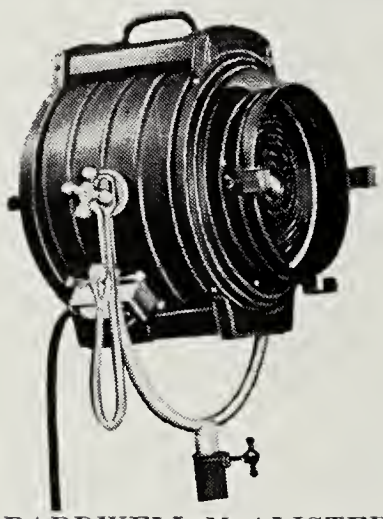
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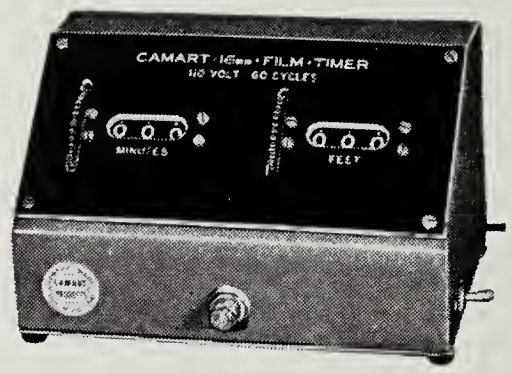
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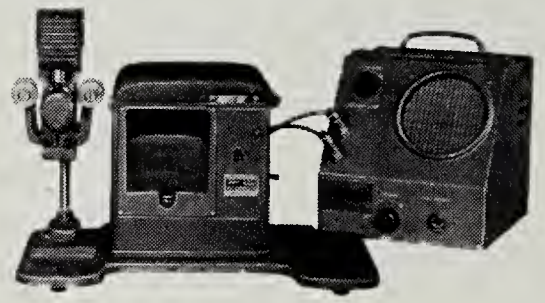
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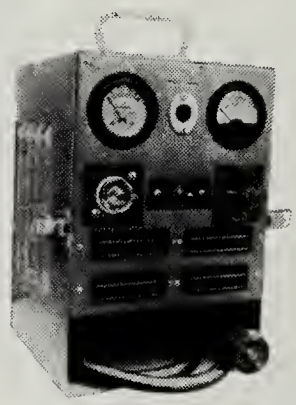
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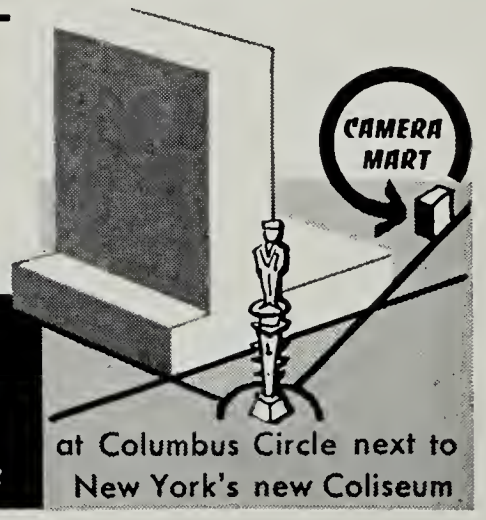
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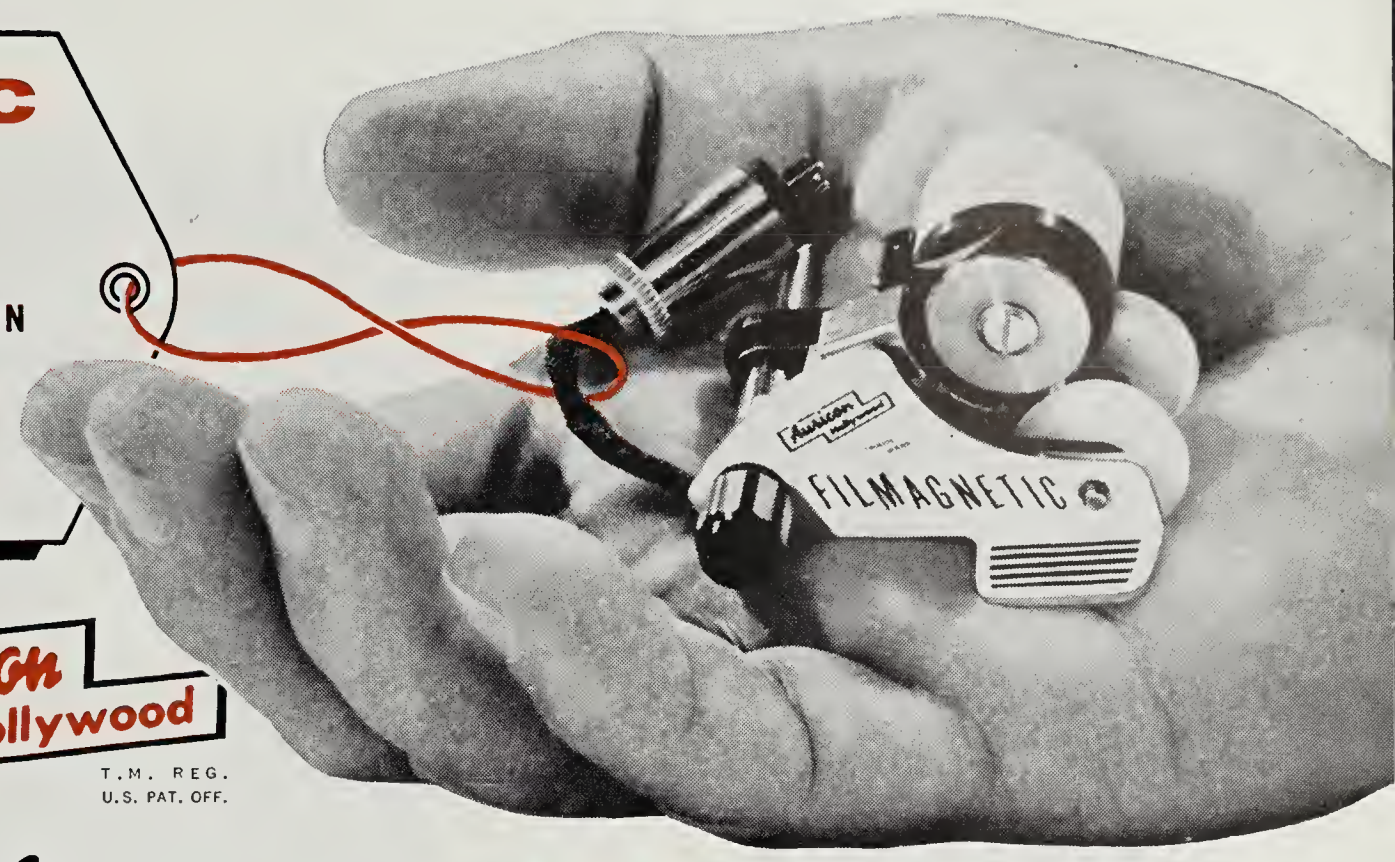
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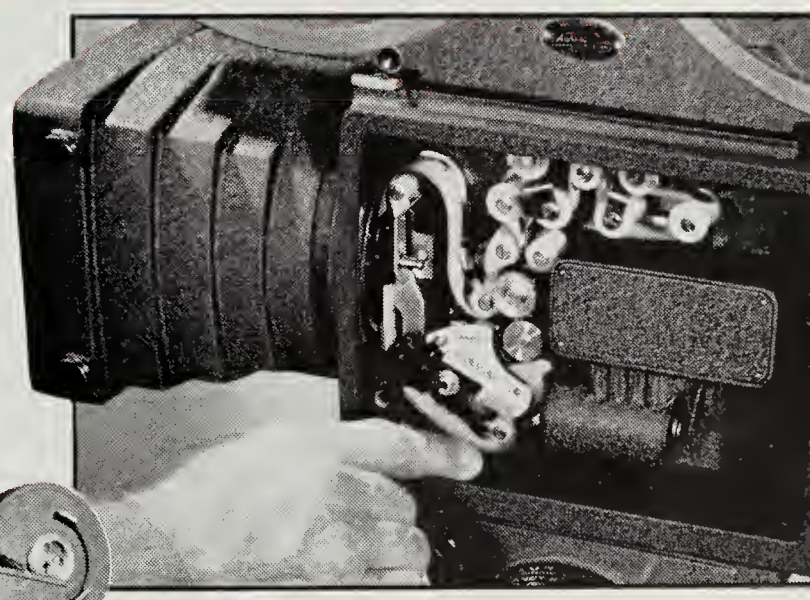
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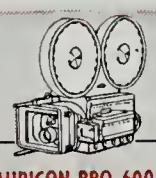
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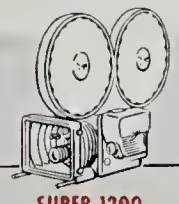
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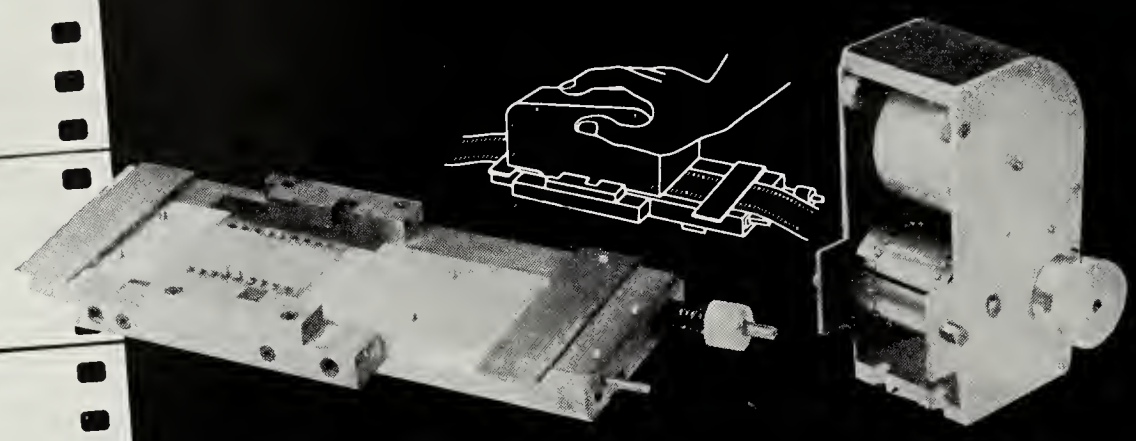


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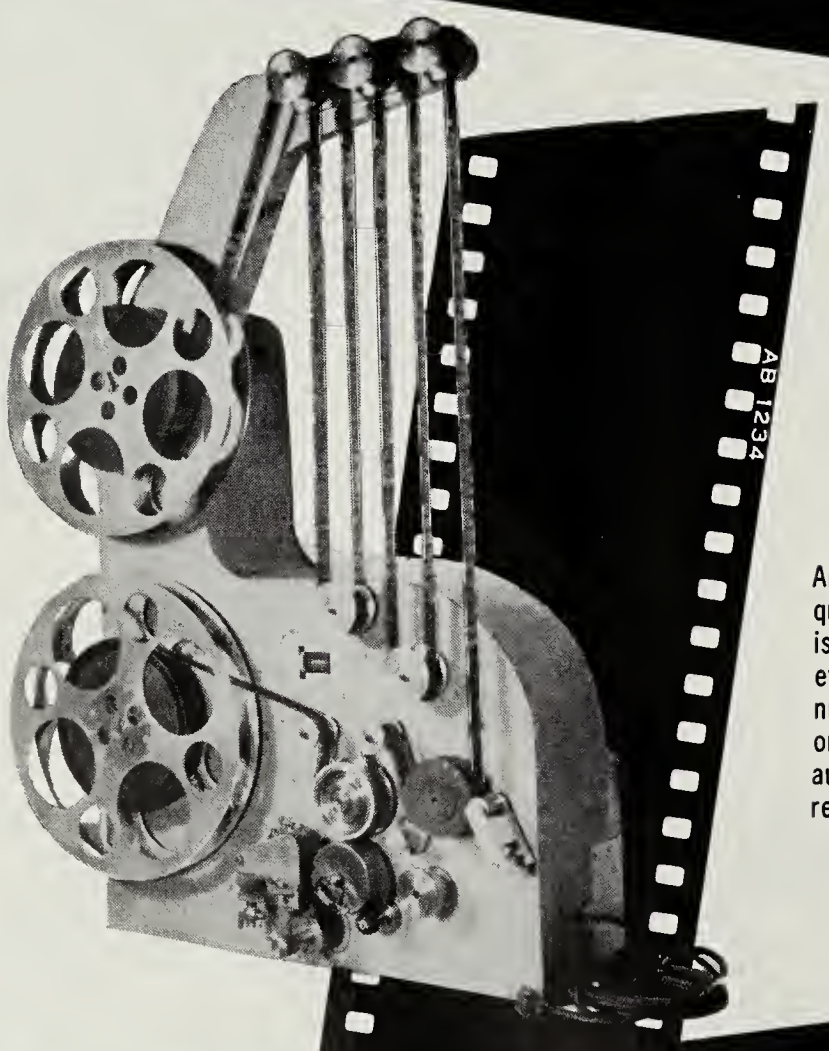
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FILM-EDGE NUMBERING MACHINE

(Coding Machine)

An important aid and time saving device which enables the Film Editor to quickly tie together the picture and sound track in perfect synchronization is the HFC film edge numbering or coding machine. The machine numbers every 16 frames in 35mm. The 16mm model numbers every 40 frames. The numbering block generally consists of two letter wheels or one number and one letter wheel manually operated and four number wheels which move automatically and number the film from 0001 to 9999. All numbers can be reset by hand to begin at any number.

ENM—35—(35MM MODEL)
ENM—16—(16MM MODEL)
$2500 F.O.B. HOLLYWOOD

AT BETTER DEALERS EVERYWHERE

precision film editing equipment/reels, cans and shipping cases

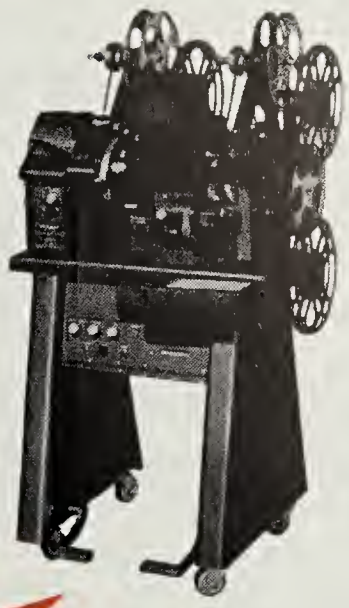
HOLLYWOOD FILM COMPANY

956 N. Seward Street, Hollywood 38, California/HOllywood 2-3284

branch office:
HOLLYWOOD FILM COMPANY
630 Ninth Avenue, New York, New York/CIrcle 7-1630

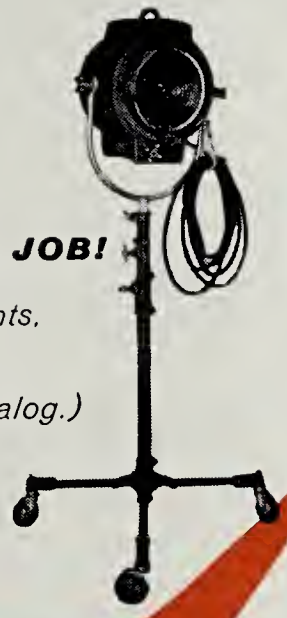
AT LAST! A FLEXIBLE EDITING MACHINE!

(Now, on ONE editing machine, the McAlister EDIMAC, you can run 16 or 35 sound with 16 or 35 picture. It's 4 machines in 1. Write for folder.)



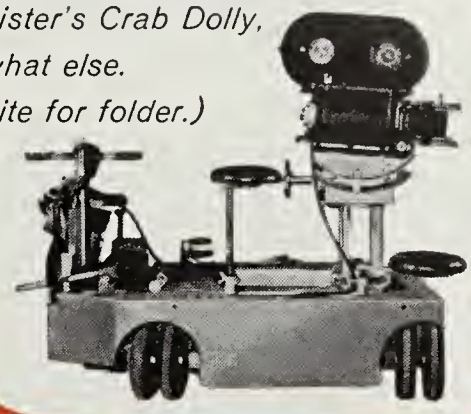
GOOD LIGHTING JOB!

(McAlister lights, of course! Send for catalog.)



PERFECT DOLLY SHOT!

(McAlister's Crab Dolly, what else. Write for folder.)



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Hollywood 38, California

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Hollywood 28, California

CINEQUIPMENT FILMGERATE GMBH
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Munich, Germany

for the newest, most advanced lighting and production equipment

J. G. McAlister Inc.

First in Los Angeles!

Carter Car-top Platforms



Sedan Car-top Platforms



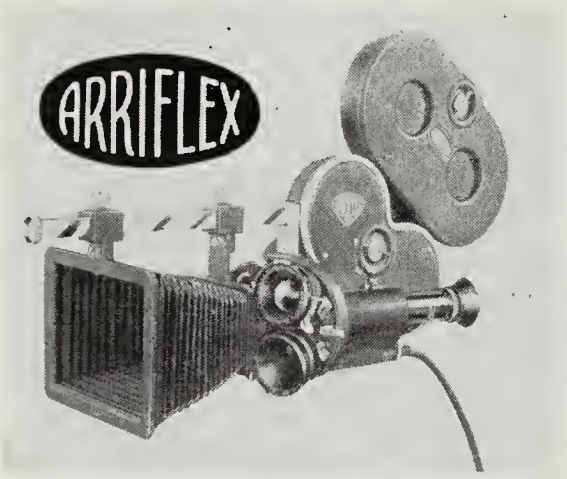
Station Wagon Car-top Platform

Doubles as luggage carrier. Easy installation. Tested at speeds up to 110 m.p.h.

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ALSO

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For Arriflex, Cine-Special. Bolex, and Bell & Howell cameras.

600mm	$599.95
400mm	239.50
300mm	164.50
150mm	134.50
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Photographic Assignments

JULY • 1956

Who, where and what the industry's cameramen were shooting last month.

ALLIED ARTISTS

• Harry Neumann, ASC, "Out of This World," with Huntz Hall and the Bowery Boys. Austen Jewell, director.

• William Clothier, "Dragoon Wells Massacre," Eastman Color & CinemaScope, with Barry Sullivan and Mona Freeman. Harold Schuster, director.

AMERICAN NATIONAL

• Curt Fetters, "The Man Called X," TV, (Ziv-TV) with Barry Sullivan. Eddie Davis, director; "Science Fiction Theatre," TV, (Ziv-TV). Herb Strock, director.

• Bob Hoffman, "Highway Patrol," TV, Ziv-TV, with Broderick Crawford. Lew Landers, director; "Science Fiction Theatre," TV, Ziv-TV. Paul Gilfole, director.

• Monroe Askins, "Science Fiction Theatre," TV, Ziv-TV. Eddie Davis, director; "Dr. Christian," TV, Ziv-TV, with MacDonald Carey. Herb Strock, director.

BILTMORE STUDIOS (New York)

• J. Burgi Contner, ASC, "Four Boys and a Gun," (Security Pictures for U.A. release.) William Berke, producer-director.

CALIFORNIA STUDIOS

• Fleet Southcott, "Gunsmoke," TV, (Film Center Prod.) with James Arness and Dennis Weaver. Ted Post, director.

• Hal McAlpin, "O. Henry Playhouse," TV, (Gross-Krasne, Inc.) with Thomas Mitchell. Peter Godrey and Barney Girard, directors; "Dr. Hudson's Secret Journal," TV, (Wesmor, Inc.) with John Howard. Peter Godfrey, director.

CARTHAY SOUND STAGE

• William Whitley, ASC, "The Lone Ranger," TV, with Clayton Moore and J. Silverheels. Earl Bellamy and Oscar Rudolph, directors.

COLUMBIA

• Desmond Dickenson, "Fire Down Below," (Warwick Prod. shooting in Trinidad) with Rita Hayworth, Robert Mitchum and Jack Lemmon. Robert Parrish, director.

• Fred Jackman, Jr., "Rin-Tin-Tin," TV, (Screen Gems) with Lee Aaker and James Brown. Harry Gerstad, director.

• Burnett Guffey, ASC, "End As a Man," (Horizon-American Prod.) (Shooting in Florida) with Ben Gazzara. Jack Garfein, director.

• Kit Carson, "The Missing Witness," with Betty Garrett and Phil Carey. William Asher, director.

• Henry Freulich, ASC, "The Phantom Stagecoach," with William Bishop and Kathleen Crowley. Ray Nazarro, director.

• Wilkie Cooper, "Seven Waves Away," Copa Prods. shooting in London, with Tyron Power and Mai Zetterling. Richard Sale, director.

• Benj. Kline, ASC, Rumble on the Docks," with James Darren and Jerry Janger. Fred S. Sears, director; "Utah Blaine," with Rory Calhoun and Susan Cummings. Fred Sears, director.

• Charles Lawton, ASC, "The Captives," with Randolph Scott. Sam Nelson, director.

• Gert Andersen, ASC, "Ford Theatre," TV, Screen Gems. James Sheldon, director.

WALT DISNEY

• Gordon Avil, ASC, "The Mickey Mouse Club," TV. Sid Miller, director.

• Walter Castle, ASC, "The Dairy Story," TV. William Beaudine, director.

• Charles Boyle, ASC, "Disneyland," TV. William Beaudine, director.

FILMCRAFT STUDIOS

• Virgil Miller, ASC, "You Bet Your Life," TV, Filmcraft Prods., with Groucho Marx. Robert Dwan, director.

FLYING A

• Bill Bradford, ASC, "Buffalo Bill, Jr.," TV, with Dickey Jones and Pappy Cheshire. George Archinbaud and Frank MacDonald, directors; "Annie Oakley," TV, with Gale Davis. George Archibaud and Frank MacDonald, directors.

FOX WESTERN AVENUE STUDIOS

• Lloyd Ahern, ASC, "You Are There," TV, TCF TV. William Russell, director.

• Karl Struss, ASC, "My Friend Flicka," TV, TCF TV, with Gene Evans and Anita Louise. John English, director; G. E. Theatre, TV, TCF TV. Lewis Allen, director; "Broken Arrow," TV, TCF TV, with John Lupton. Richard Bare and Alvin Ganzer, directors.

GENERAL SERVICE STUDIOS

• Ray Foster, ASC, North American Commercial TV, (Mercury International). T. Gadden, director.

GOLDWYN STUDIOS

• George Clemens, ASC, "Schlitz Playhouse of Stars,' TV, (Meridian Prods.). Various directors.

• Norbert Brodine, ASC, "The Loretta Young Show," TV, Lewislor Inc., with Loretta Young. Various directors.

• Lester White, ASC, "Crossroads," TV, Federal Telefilms, Inc. J. Addiss, director.

(Continued on Page 468)

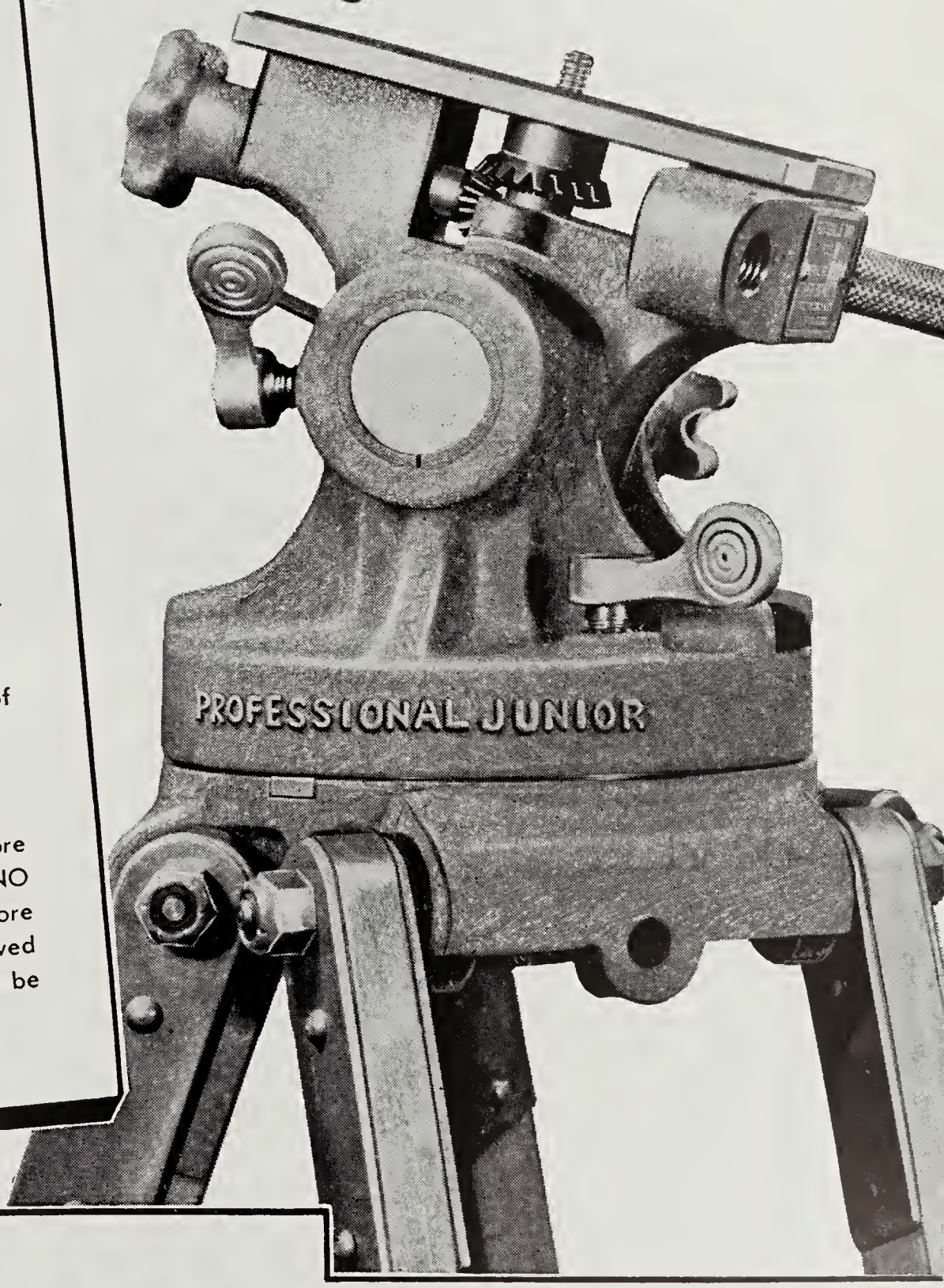
Tripod Perfection!

IMPROVED PROFESSIONAL JUNIOR TRIPOD

Always a great tripod, the new improved PROFESSIONAL JUNIOR with the removable head, now features the following improvements:

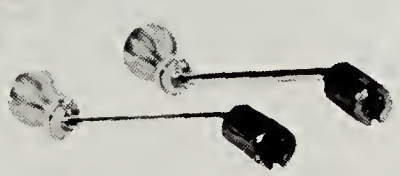
1. Simplified camera attaching method with easily accessible knob—no fumbling underneath camera platform—quick, easy, positive.
2. Adjustable telescoping pan handle—make it shorter or longer to suit your needs.
3. Additional pan handle sockets for left, right or reverse tilt.
4. Larger gripping area and sturdier construction of tilt and pan locking levers.
5. New tie-down eyelets in flange.

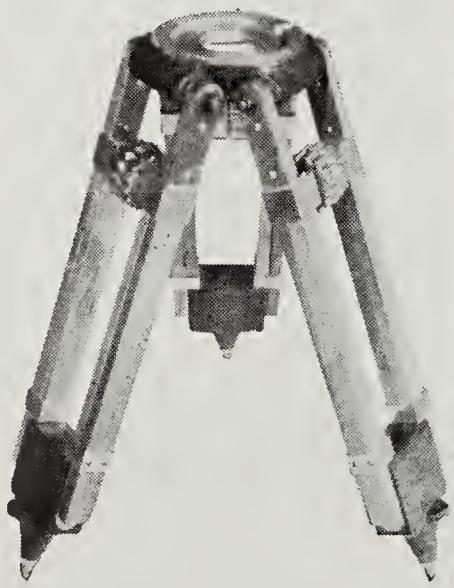
You'd expect this outstanding tripod to cost a lot more money, but here's the big surprise—THERE IS NO ADVANCE IN PRICE! For better, smoother, more efficient performance—see, test, try the improved PROFESSIONAL JUNIOR today. You won't want to be without it.





Professional Junior
GEARED HEAD
interchangeable with Friction Head on same tripod.





New Professional Junior Adjustable wood
BABY TRIPOD
—for friction and geared Heads
Has substantial shoe and spur.
Measures from floor to flange 25" extended—17" collapsed.
High-Hat Low Mount Available

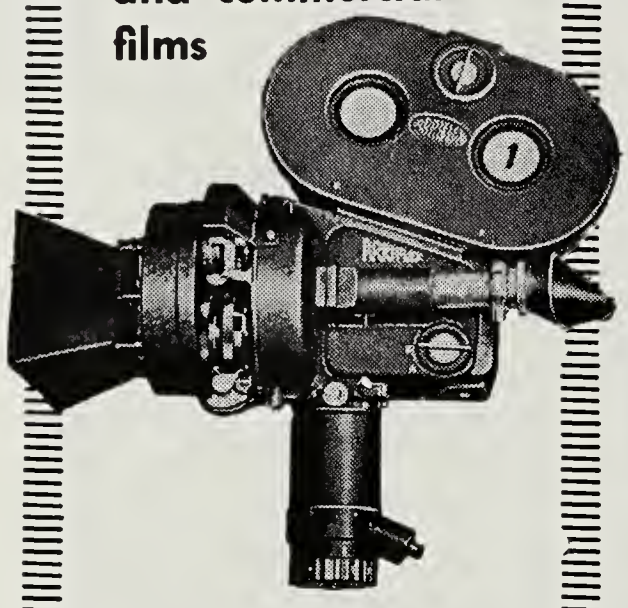
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CAMERA EQUIPMENT CO.
Dept. A-8-23 315 West 43rd Street, New York 36, N. Y.

ARRIFLEX

New 35 mm Model 2A
With 180° Shutter

A TRULY GREAT CAMERA

for TV, Newsreel and commercial films



For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

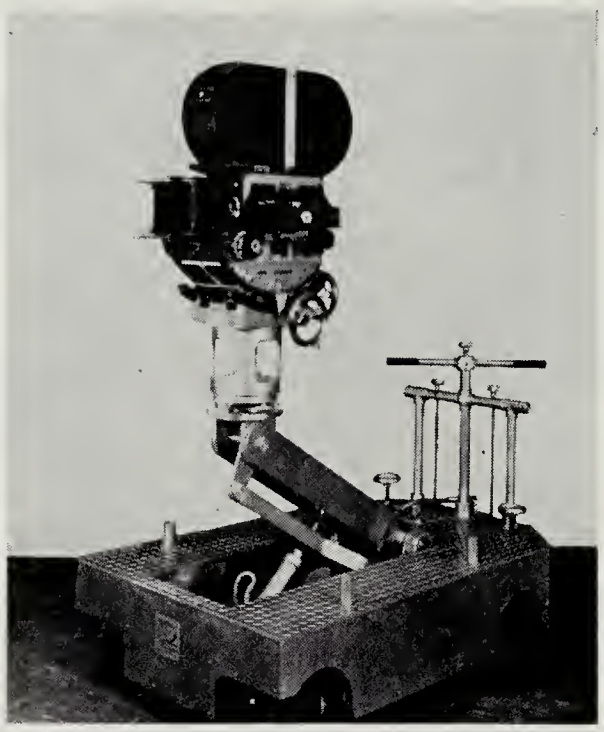
Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200' or 400' magazine. Write for free folder.

Blimp now available.
16mm ARRIFLEX also available.

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WHAT'S NEW

. . . in equipment, accessories, service



Crab-Hydrolly

National Cine Equipment, Inc., 209 West 48th St., New York 36, N.Y., announces its new Crab-Hydrolly, a fast, all-angle camera dolly featuring a noiseless hydraulic boom arm, easy-rolling dual wheels, and both conventional and "crab" steering.

Boom is actuated by a silent hydraulic system having an accumulator which is loaded manually by a hand pump. Rise and fall of boom is by finger-tip control.

Maximum height to top of mounting head is 48"; minimum height, 21". Length of chassis is 61". Complete details and price may be had from the company.

"Fluid-Action" Heads

Miller Precision Equipment, Inc., 7305 Melrose Ave., Hollywood 46, Calif., is now manufacturing the first U.S.-produced Miller "Fluid-Action" Tripod Heads. Product features fluid pan control, fluid tilt control, quick camera lock, and an adjustable handle with provision for either left-hand or right-hand use. Pan and tilt movement operates on a semi-hydraulic principle, is fully patented, and is free from shake and judder and backlash.

The Senior-D model is recommended for all cine and professional 16mm cameras. Soon to be announced is a new, heavy-duty model for heavier cameras, plus a line of semi-professional and professional tripods.



New G-E Exposure Meter

General Electric Company announces a new exposure meter having twice the sensitivity of its predecessor. Trade-named the Guardian it features a light-multiplying attachment which increases the meter's sensitivity 64 times for incident light readings and 4-times for reflected-light readings. Exposure values, f/stops, and Polaroid numbers are read directly. List price of meter is $34.50. The Dynacell and incident-light attachments are extra.



Power Converter

A new 750-watt DC-to-AC power converter is announced by Carter Motor Company, 2711 W. George St., Chicago, Ill. Product offers power capacity 50% greater than the largest previous Carter converter. Similar in appearance to the 500-watt converter, it is 1¼" longer and weighs approximately 55 pounds. List price is $246.

(Continued on Page 466)

New Accessories for the

ARRIFLEX 16



400-foot FILM MAGAZINE

SYNCHRONOUS MOTOR

ANIMATION MOTOR

Enthusiastic users everywhere have hailed the Arriflex 16 as the outstanding camera in the 16mm field. Now, with the extra convenience of the 400-foot Film Magazine, the split-second timing of the Synchronous Motor and the added utility of the Animation Motor — it is certainly the most versatile camera, capable of filling every need in the studio or on location.



400-foot FILM MAGAZINE

(shown with motor detached)

A compact, single-compartment, displacement type magazine for 400-foot darkroom loads (on cores) and 200-foot daylight spools.

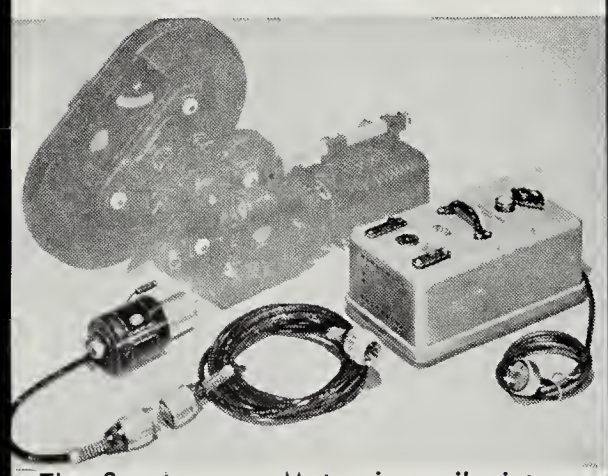
No belts are employed. A Torque Motor — detachable and interchangeable for use with several magazines — drives the take-up through a gear transmission with the correct tension regardless of the amount of film on the take-up spindle.

Operates on 6-8 volts DC, from the power supply used to operate the camera. Electrical contact is made as magazine is attached to camera. The Torque Motor is equipped with a forward-reverse switch. Each magazine has a footage counter — and is numbered for identification.

400-foot FILM MAGAZINE (less Torque Motor) $140.00

Interchangeable Torque Motor only 175.00

SYNCHRONOUS MOTOR FOR 110 V. AC

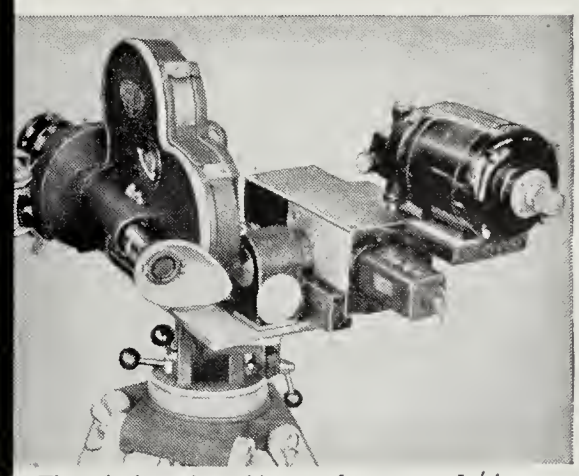


The Synchronous Motor is easily interchangeable with the Variable Speed Motor, supplied as standard equipment. Unusually light and compact, the Synchronous Motor can be used on the camera for hand-held shooting.

The motor is furnished with its own 110 volt, 60 cycle AC power supply. Output to the camera motor is 42 volts, 60 cycles AC and to the Torque Motor on the magazine (when used) 8 volts DC.

SYNCHRONOUS MOTOR (110 V. AC, 60 cycles—24 frames per second) with power supply and cable $395.00

ANIMATION MOTOR



The Animation Motor features 1/4 second exposures for either single frame, or continuous shooting at 60 frames per minute. A built-on frame counter registers up to 4 digits.

The Animation Motor can be used manually, with a foot switch, relay, or an intervalometer. The unit operates on 110 volts AC, 60 cycles, but can be supplied for operation at other voltages and frequencies on special order.

Complete ANIMATION MOTOR Assembly with Remote Control $595.00

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Quality...

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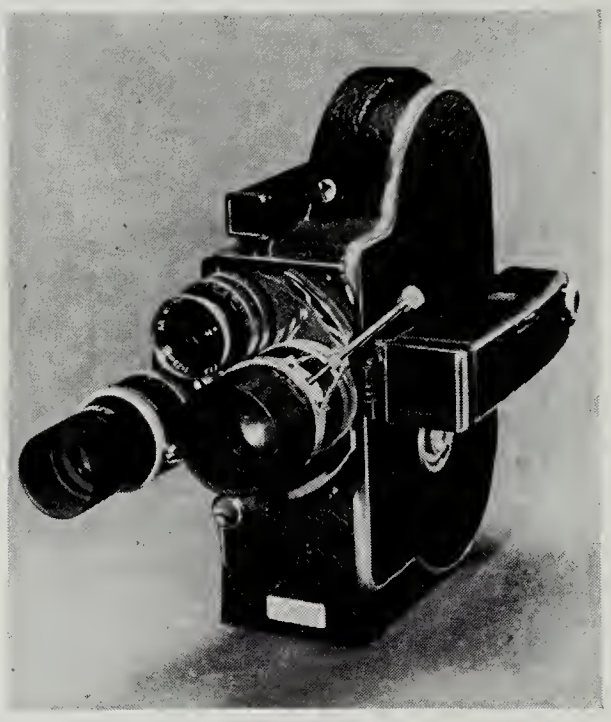
MOVIELAB

- ROUND-THE-CLOCK SERVICES
- NEGATIVE DEVELOPING
- FIRST PRINT DEPARTMENT
- ULTRA VIOLET AND FLASH PATCH PRINTING
- 16MM AND 35MM RELEASE PRINTING
- KODACHROME PRINTING
- 63 EDITING ROOMS
- SPECIAL TV SERVICES
- For Color it's Rainbowlab Inc.

MOVIELAB FILM LABORATORIES, INC.
619 West 54th Street, New York 19, N. Y. JUdson 6-0360

WHAT'S NEW

(Continued from Page 464)



Lens Control Handle

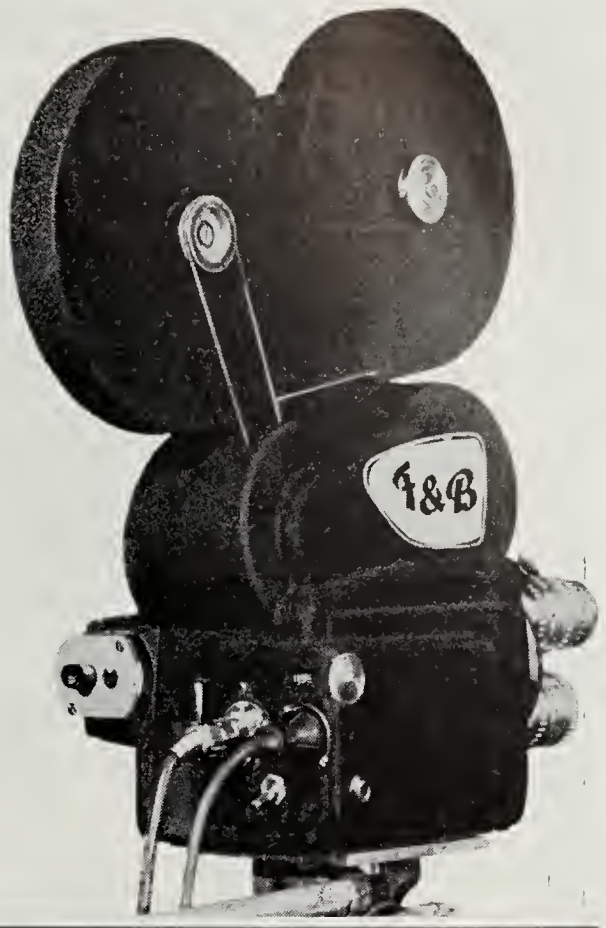
Stevens Engineering Co., 2421 Military Ave., Los Angeles 64, Calif., announces an adjustable lens handle which can be fitted to either the focus or iris control ring of any lens from 1″ to 2″ in diameter. Purpose is to afford camera operator positive and easier adjustment of lens settings, especially in making follow-focus shots. List price is $3.50.



16mm Test Film

A new 16mm test film that measures registration, aperture size, resolution, shutter timing, centering of image, steadiness of its own test image with respect to the perforation, and also provides a "thousandths scale" for measuring film movement in double-exposure testing of printer steadiness has been announced by the Society of Motion Picture and Television Engineers. Film is said to be ideally suited to needs of manufacturers of 16mm projectors, for film labs to adjust 16mm printers, and for precise alignment of 16mm black-and-white and color TV films. List price is $27.00, and may be had from the Society's headquarters, 55 West 42nd St., New York, N. Y.

NEW F & B "CINEVOICE 400"



F&B's new Cinevoice CONVERSION for 400 ft. magazines . . .

DOES NOT cut down your camera . . .
DOES NOT require an auxiliary motor . . .
CAN STILL be used as the original 100 ft. camera when necessary.

A special needle-bearing take-up system and ball-bearing magazine shafts make possible the superbly smooth, steady and jam-free operation. Either Mitchell or Bell & Howell 400 ft. magazines may be used on F&B conversion; and, in 10 seconds, the magazine can be removed, the light trap closed, and the Cinevoice is ready for operation as a 100 ft. camera again.

PLUS . . . ALL THESE BUILT-IN FEATURES

1. SILENCED VEEDER footage counter.
2. Built-in behind the lens filter slot, with two filter holders.
3. Headphone jack built in camera.
4. Cannon plugs for all sound sockets.
5. Tripod socket rebushed with brass insert.
6. New neon signal light.

PLUS . . . COMPLETE REFINISHING . . .

Your Cinevoice camera and 400 ft. magazine completely overhauled, cleaned up and re-finished in beautiful, professional black crackle finish.

YET . . . F&B "CINEVOICE 400" IS THE LOWEST PRICED CONVERSION AVAILABLE . . .

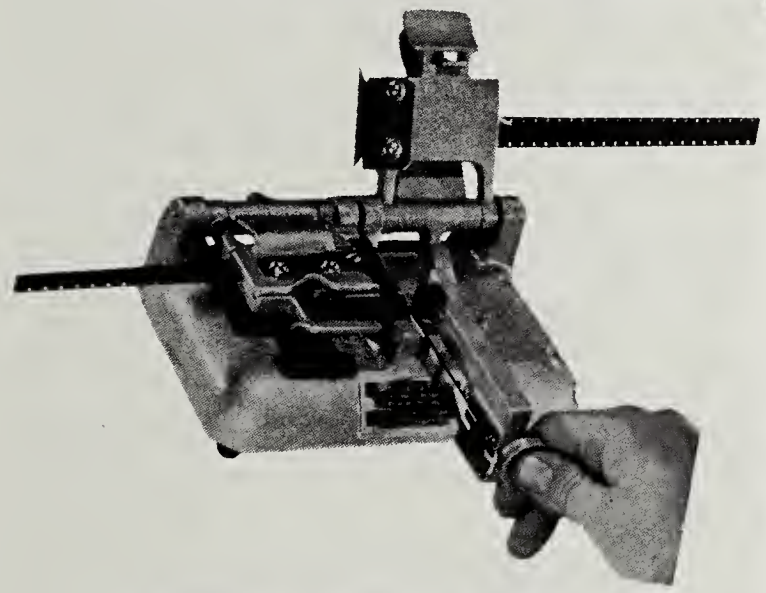
For Complete new outfits . . .
Turret Cinevoice plus F&B conversion and 400 ft. B&H magazine.....1200.00

PRICE ONLY $345.00
not including magazine.

AUTOMATIC SPLICER

SPLICE-O-FILM

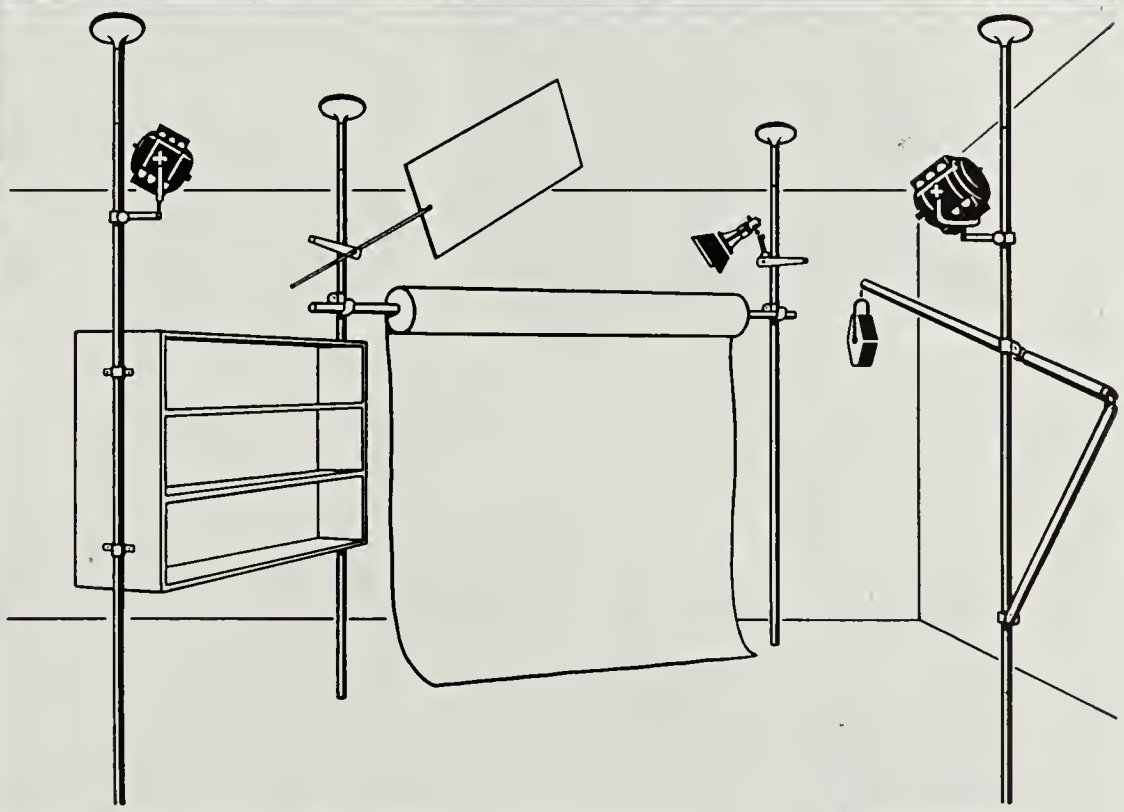
for 8mm-16mm combination & 35mm with the Exclusive PRESET SCRAPER!



A PERFECT SPLICE EVERY TIME AUTOMATICALLY!

The major cause of film failures is poor splicing . . . and the major cause of poor splicing is improper scraping (either too much or too little). SPLICE-O-FILM solves both of these problems with its automatic scraper that takes off exactly the right depth of emulsion every time . . . regardless of applied pressure. SPLICE-O-FILM is a precision tool . . . imported from England. It has a precision-ground, tungsten steel scraper that is preset and ready for making thousands of splices.

BROCHURE ON REQUEST



A NEW WAY TO HOLD THINGS UP . . . ANYWHERE . . .
LIGHTS - PROPS - BACKGROUNDS - MIKES
Without Nails or Screws - With

POLECAT



Adjust - push up - it's done.

POLECAT is o feotherweight, telescoping column of 1½ inch onodized oluminum with an exponsion spring in the top. Adjust it once to your ceiling height with locking collor. Then just spring it in ond out of ploce os you pleose. Rubber pods top ond bottom protect ceilings ond floors. *POLECAT con't be knocked over . . . ond takes less floor space thon a silver dollar.*

HOLDS 400 POUNDS. Makes a perfect, mobile, lightweight for lights. Two POLECATS with cross piece and fitting can be used to hold a roll of background paper, props, flats, etc. Perfect for location filming.

BROCHURE ON REQUEST

AVAILABLE NOW AT F&B

MILLER **Fluid Action** TRIPOD HEAD

Complete control for smoother ponning in both horizontol ond verticol positions . . . Full 360° horizontol movement. Fits F&B PRO-CINE TRIPOD.

ADAPTER PLATE $15.00 PRICE $113.50

F&B

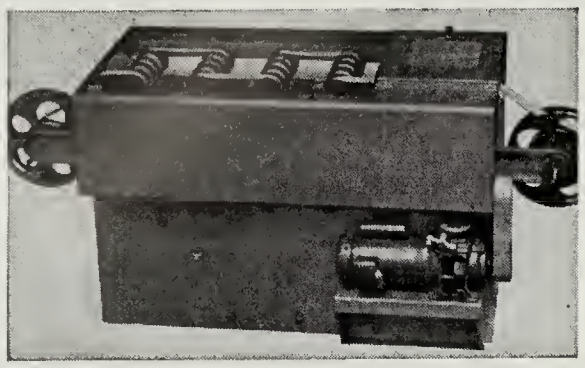
FLORMAN & BABB

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Phone: Murray Hill 2-2928

Cable Address — FLORBABB, N. Y.

PROCESS YOUR OWN FILMS & SAVE



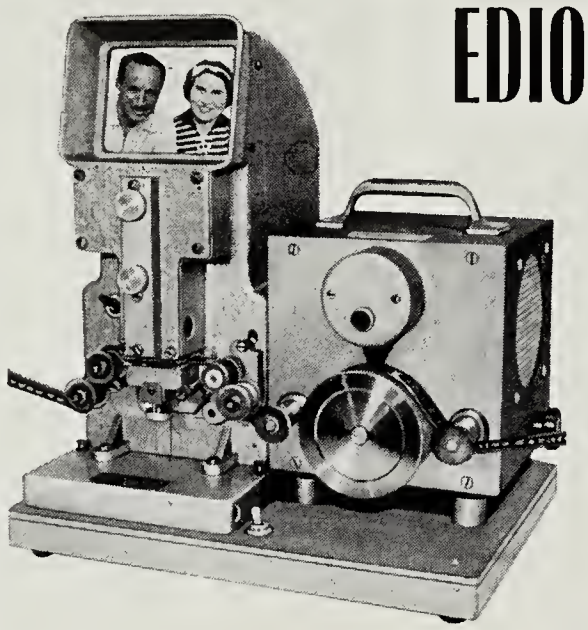
A true one-mon job, requires no speciol skill, no rigging, no constont watching—simply plug in and operate. Write for brochure.

For Motion Picture Producers TV Stations, Industrial or Documentory Producers, Photo Finishers, Loboratories, Microfilmers, Universities, Etc.

BRIDGAMATIC Jr. does automatic 16mm film processing at small cost. Built-in dry-box, heating elements, stainless steel tanks, air squeege—develops and dries ready for showing 600' positive, 180' negative per hour, from **$1095**

Larger capacity negative/positive, Reversal and color models available 16/35/70mm standard or custom built, from.....**$1887**

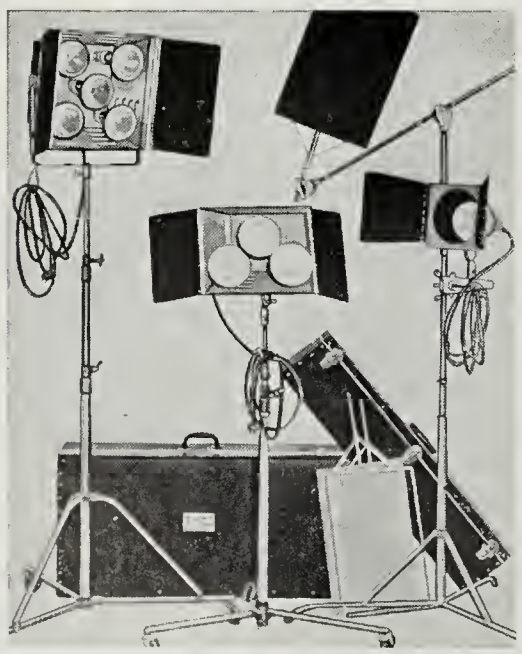
EDIOLA ACTION VIEWER & SOUND READER



This most advanced and first low priced Professional 16mm Motion Picture Film Viewer projects a big, clear aerial image, 3" x 4". Shows up minor flaws in film not normally detected. Operates left to right. Roller-smooth action eliminates film scratching or damage to sprocket holes. Built-in cue marking device—hum-free amplification—synchronized with Precision Sound Reader on Special base or may be separated for individual use. Write for brochure.

Ediola Viewer, Reader & Base	$362.45	Ediola Optical Sound Reader	185.00
Ediola Action Viewer	139.95	Ediola Base only	49.50

COLORTRAN'S "PACKAGED LIGHTING"



For Studio and Location Shots!

"A Studio in a Suitcase"

COLORTRAN replaces heavy, cumbersome, expensive equipment. Ideal for studio and location shots. 5000 watts of light from an ordinary household fuse. Complete line includes converters, spots, floods, scoops, diffusion frames, gator grips, stands, gobo adapters, etc. Also in packaged units such as the Groverlite Senior 5000 Kit which includes two Senior Lites with Senior Converter and two stands of chromed steel with column supports to prevent all "waver". Packed in two metal-wood cases that hold all units securely in position with web straps. **Complete**$265

Other ColorTron Kits ovoilable write for ColorTran cotolog

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Western Branch: 6331 Hollywood Boulevard, Hollywood 28, California — Phone: HO 7-9202

PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 462)

INDEPENDENTS

• FRANK PLANER, ASC, "The Pride and the Passion," (Technicolor; VistaVision) Stanley Kramer Prod. for UA; shooting in Spain) with Cary Grant and Frank Sinatra. Stanley Kramer, producer-director.

• HAROLD LIPSTEIN, ASC, "Spring Reunion," (Bryna Prods. UA release) with Betty Hutton and Dana Andrews. Robert Pirosh, director.

• JAMES WONG HOWE, ASC, "Drango," (Earlmar Prods. for UA release) with Jeff Chandler and Joanne Dru. Jules Bricken, director.

• WILFRED M. CLINE, ASC, "Hidden Fear," (Shooting in Copenhagen) (St. Aubrey-Cohn Prods. for United Artists release) with John Payne and Natalie Norwick. Andre De Toth, producer-director.

• LEE GARMES, ASC, "The Sharkfighters," (CinemaScope & Color) (Samuel Goldwyn Jr. Prods. UA release) (Shooting in Cuba) with Victor Mature and Karen Steele. Jerry Hopper, director.

• CHARLES STRAUMER, "The Gun and the Gavel," color and widescreen Albert C. Gannaway Prods. shooting in Kanab, with Faron Young and Louis Jean Heydt. Albert C. Gannaway, producer-director.

• ERNEST HALLER, ASC, "Men In War," Security Pictures for UA release, with Robert Ryan, Aldo Ray and Robert Keith. Anthony Mann, director.

• RAY RENNAHAN, ASC, "The Halliday Brand," Collier Young Prod. for US Release, with Joseph Cotten and Viveca Lindfors. Joseph H. Lewis, director.

• WILIAM MARGULIES, "War Drums," Bel Air Prod. for UA release, shooting in Utah, with Lex Barker and Joan Tyler. Reginald Le Borg, director.

• JOSEPH LA SHELLE, ASC, "Showdown Creek," Bob Goldstein Prod. for UA release, with John Derek and John Smith. Gerd Oswald, director.

• FRED WEST, ASC, "Runaway Daughters," Golden State Prod. for American Int'l release, with Marla English and Tom Conway. Edward L. Cahn, director.

• WILIAM SICKNER, ASC, "The Undead," Roger Corman Prod. for American Int'l release, with Pamela Duncan and Richard Garland. Roger Corman, producer-director.

KEYWEST STUDIOS

• WALTER STRENGE, ASC, Family Films, "This is the Life," TV. William Claxton, director.

KTTV

• STUART THOMPSON, ASC, "Lassie,' TV, (Robert Maxwell Prods.) with Jan Clayton and George Cleveland. Les Selander, director.

• KENNETH PEACH, ASC, "Fury," TV, with Peter Graves and William Fawcett. Sidney Salkow, director.

• MACK STENGLER, ASC, "Captain Grief," TV, Guild Films. Stuart Hiesler, director.

METRO-GOLDWYN-MAYER

• ROBERT SURTEES, ASC, "Raintree County," (65mm and Color) with Montgomery Clift and Elizabeth Taylor. Edward Dmytryk, director.

• JOHN ALTON, "Teahouse of the August Moon," (Color; CinemaScope) with Marlan Brando and Glenn Ford. Daniel Mann, director.

• ARTHUR E. ARLING, ASC, "The Great American Pastime," with Tom Ewell and Anne Francis. Hermann Hoffmann, director.

• HAROLD MARZORATI, ASC, "Capital Offense," with Leslie Neilsen and Coleen Miller. David Friedkin, director.

• RUSSELL HARLAN, ASC, "Something of Value," shooting in Africa, with Rock Hudson and Dana Wynter. Richard Brooks, director.

• PAUL VOGEL, ASC, "The Wings of Eagles," with John Wayne, Dan Dailey and Maureen O'Hara. John Ford, director.

• F. A. YOUNG, ASC, "The Little Hut," CinemaScope and Color, with Ava Gardner and Stewart Granger. Mark Robson, director.

MOTION PICTURE CENTER

• NICK MUSURACA, ASC, "The Line Up," TV, (Desilu Prod.) with Warren Andersen. H. Morse, director.

• HAROLD WELLMAN, ASC, "Wyatt Earp," TV, (Desilu Prods.) with Hugh O'Brien. Frank McDonald, director.

PARAMOUNT

• SAM LEAVITT. ASC, "Flamenco," (VistaVision and Color) (Being photographed in Spain) with Carmen Sevilla and Richard Kiley. Don Siegel, director.

• RAY JUNE, ASC, "Funny Face," (Technicolor; VistaVision) with Audrey Hepburn and Fred Astaire. Stanley Donen, director.

• CHARLES LANG, ASC, "The Rainmaker," with Burt Lancaster and Katharine Hepburn. Joseph Anthony, director.

• LOYAL GRIGGS, ASC, "The Buster Keaton Story," (VistaVision & Technicolor) with Donald O'Connor and Ann Blyth. Sidney Sheldon, director.

• HASKELL B. BOGGS, "The Jim Piersall Story," with Karl Malden and Norma Moore. Robert Mulligan, director.

• JACK WARREN, ASC, "Beau James," VistaVision and Color, with Bob Hope and Vera Miles. Mel Shavelson, director.

REPUBLIC STUDIOS

• ED COLMAN, ASC, "Dragnet," TV, (Sherry Prods.) with Jack Webb. Jack Webb, director.

• DANIEL B. CLARK. ASC, "Do You Trust Your Wife?" TV, (Don Fedderson Prods.) with Edgar Bergen and Charlie McCarthy. Jim Morgan, director.

• BUD THACKERY, "Accused of Murder," Truecolor and Naturama, with David Brian and Vera Ralston. Joe Kane, producer-director.

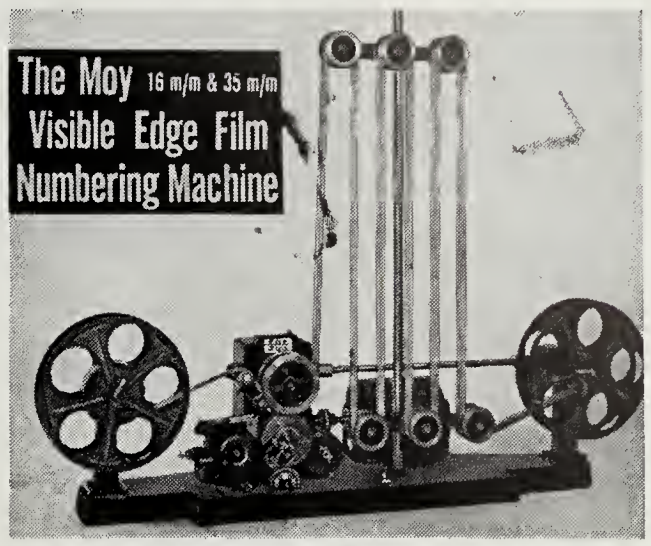
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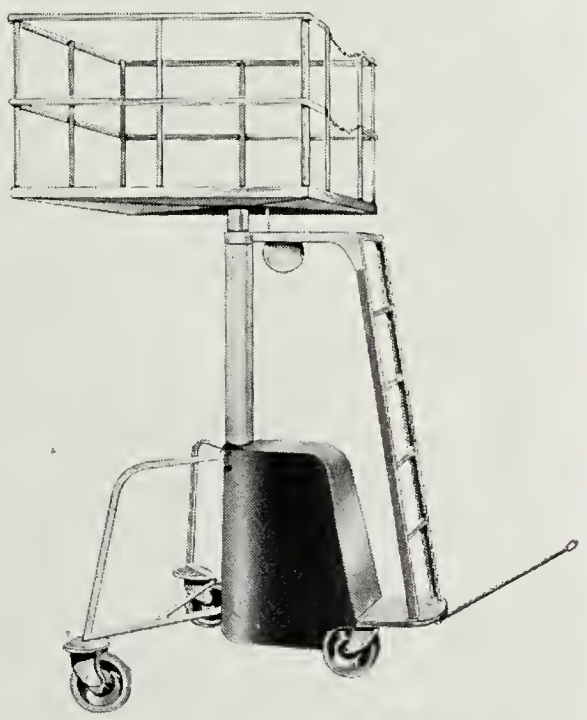
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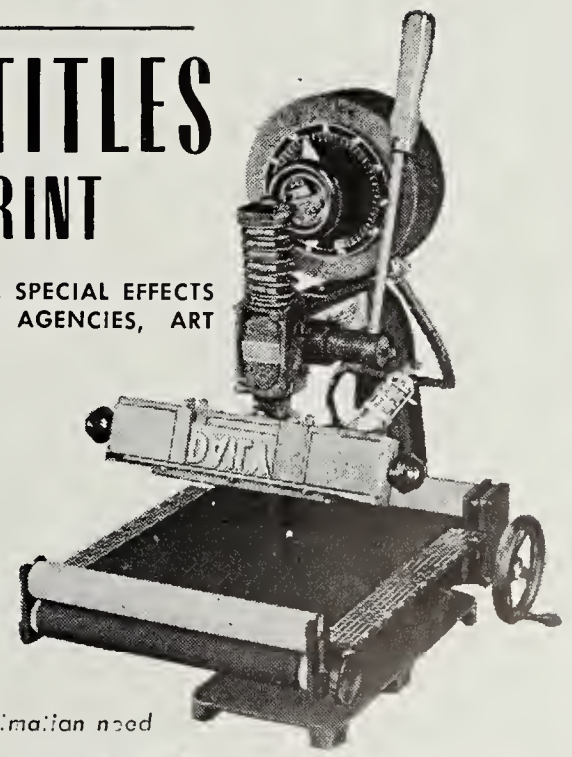


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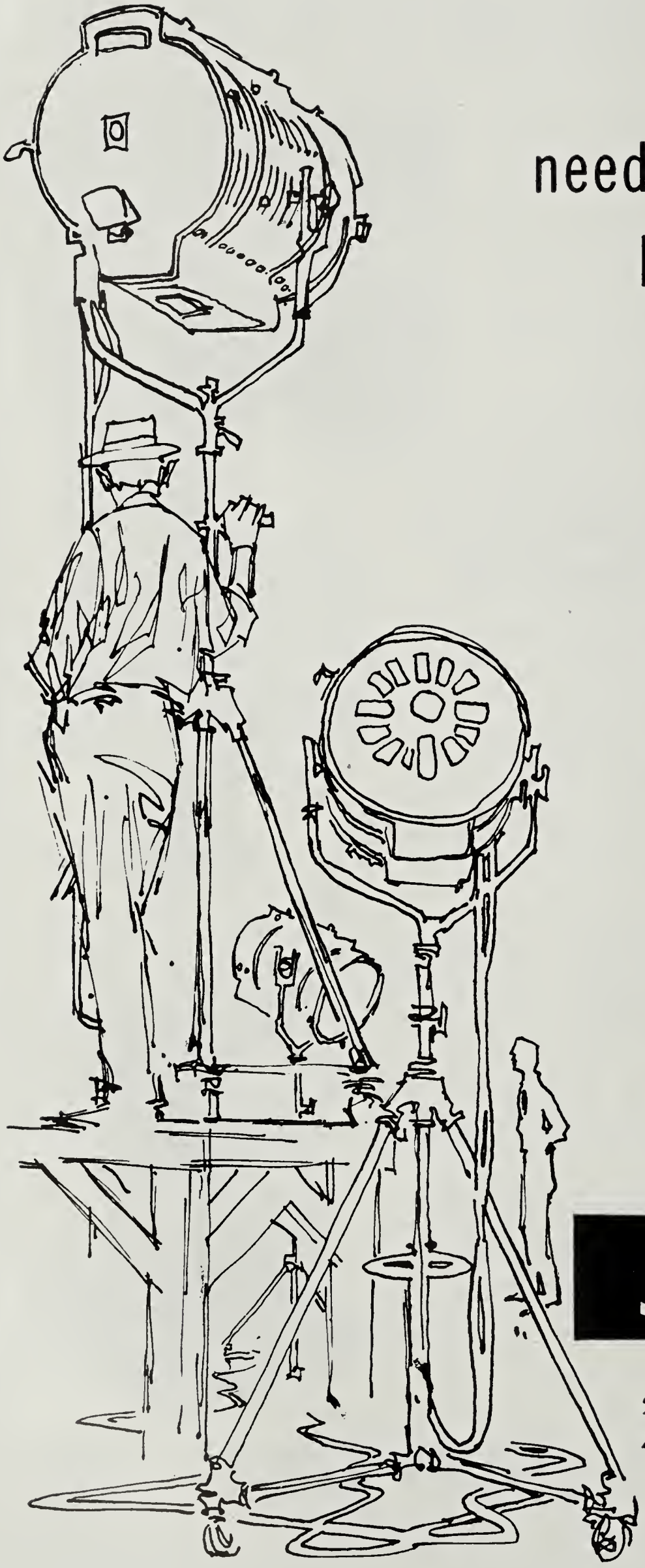
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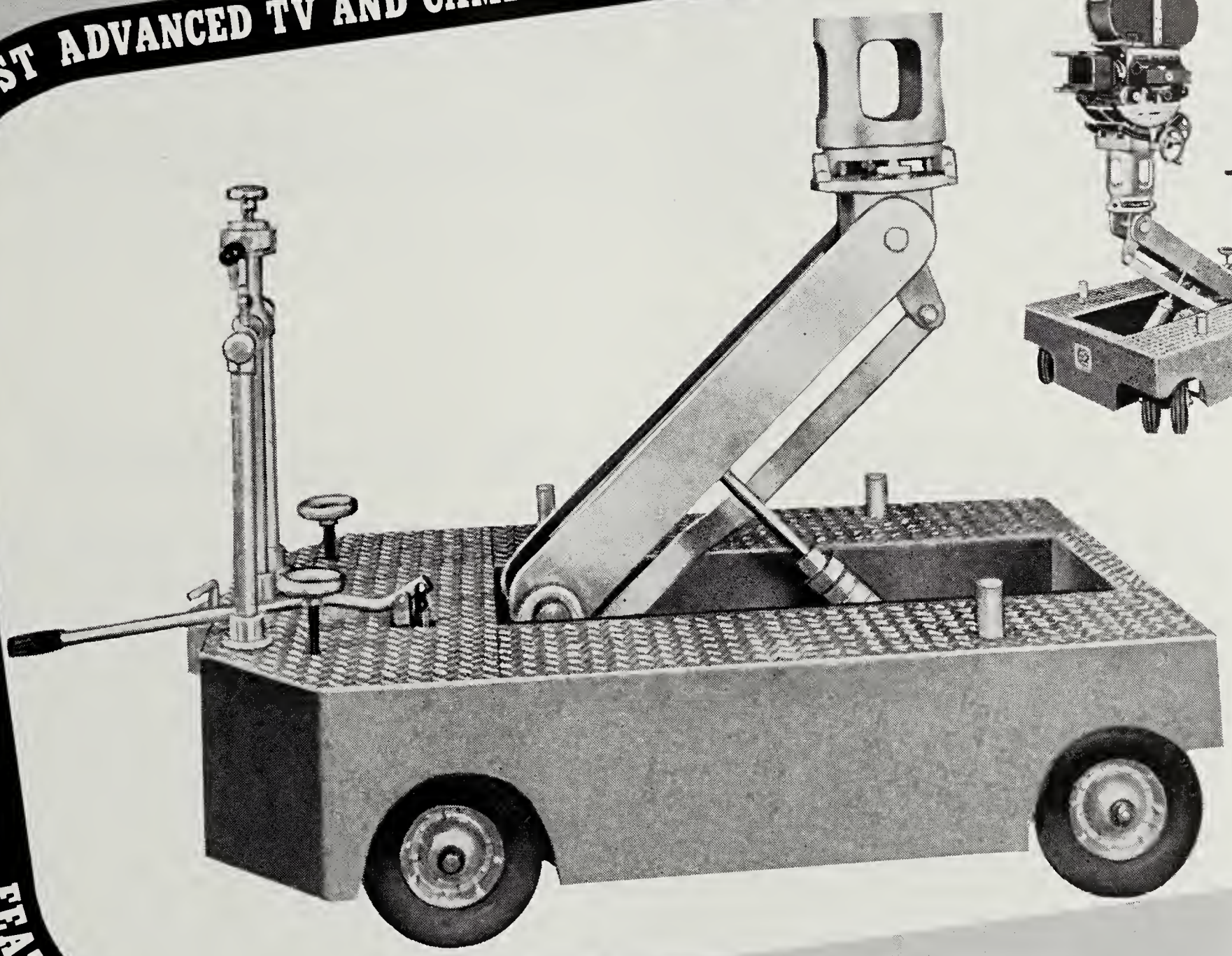
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LINING UP THE TAKE—While the players stage a rehearsal of a shooting scene, the camera on a boom is maneuvered to capture the action to best advantage.



THIS IS THE TAKE—The camera was pulled back, the boom lowered and the action caught at its dramatic best from low angle. Afterwards, camera was raised and a medium closeup made of victim's reaction.

STARTING THE NEW ASSIGNMENT

By WALTER STRENGE, A.S.C.

FOREWORD—How does a Director of Photography start a new assignment? What preparation, if any, takes place before the camera starts rolling on the first scene? We believe our readers will be interested in a cameraman's first-hand account of this procedure, so we have asked cinematographer Walter Strenge, A.S.C., to recount something of the procedure he followed in preparing for and photographing "Stagecoach To Fury"—which, incidentally, is the first feature film to be made in CinemaScope and the new Eastman Plus-X negative. Produced by Regal Films, Inc., it will be released soon by Twentieth Century-Fox Studio.

—EDITOR



WALTER STRENGE, A.S.C., who directed the photography of "Stagecoach To Fury," determines the correct exposure for filming actress Mari Blanchard, using an incident light meter.

THE FREELANCE cinematographer — that is, the camerman who is not on contract with a major Hollywood studio —works mostly for the independent film producers. His assignments very often involve a great deal more responsibility in the way of pre-production planning. This advance preparation is vital to the success of his photographic assignment; the independent producer doesn't have the studio equipment and all the other production resources that the contract cameraman has access to whenever things go wrong and he needs an assist. So it is very important that the cameraman who undertakes an independent assignment take every possible precaution to insure that he has a dependable and efficient crew, that ample equipment is brought along on locations, and that there is complete and amicable agreement between himself and the producer and the director.

My assignment to direct the photography of "Stagecoach To Fury" began with a telephone call one morning. It was Screen Director William Claxton checking to see if I was now on a picture. "Would I be interested in shooting 'Stagecoach To Fury'?" Then he gave me the producer's phone number to call. An appointment was arranged for the morning of June 11th. At that time we discussed the picture and reached an agreement, which included amount of salary, how my screen credit was to appear, and the size of the crew I should have to work with me.

As it was up to me to pick my crew, and this detail had to be attended to at once, I went on salary on June 13th—three days after my interview with the producer. With a starting date for the picture set for June 20th, this meant that crew members accepting commitments to work on the picture would have to make themselves available on that date, which was a week later. But when you have a group of men who usually work with you all the time and who like you, invariably they are willing to wait.

As this was to be the first feature production ever to be photographed in CinemaScope and the new Eastman Plus-X negative, and because I had never before photographed a picture with a CinemaScope lens, I had to do some checking before the day came to start the picture. We had arranged to lease a CinemaScope lens from 20th Century-Fox studio, so it was logical that I should make an appointment with that studio's camera department head, Sol Halprin, A.S.C., for the purpose of getting a quick rundown on use of the lens, etc. It was Halprin who, together with Earl Sponable, had developed and improved the CinemaScope lens.

Following this, I visited a local camera rental service and arranged to lease a Mitchell BNC camera and tripod for the production. I had them set up the camera and put on the CinemaScope lens and make a test. This was immediately taken to a laboratory for development and the results showed that the lens and camera equipment checked out perfectly. Now all there remained to do was arrange for renting such other items of equipment as camera car for location shots, a boom for use on the stage, etc., and we were all set to start shooting.

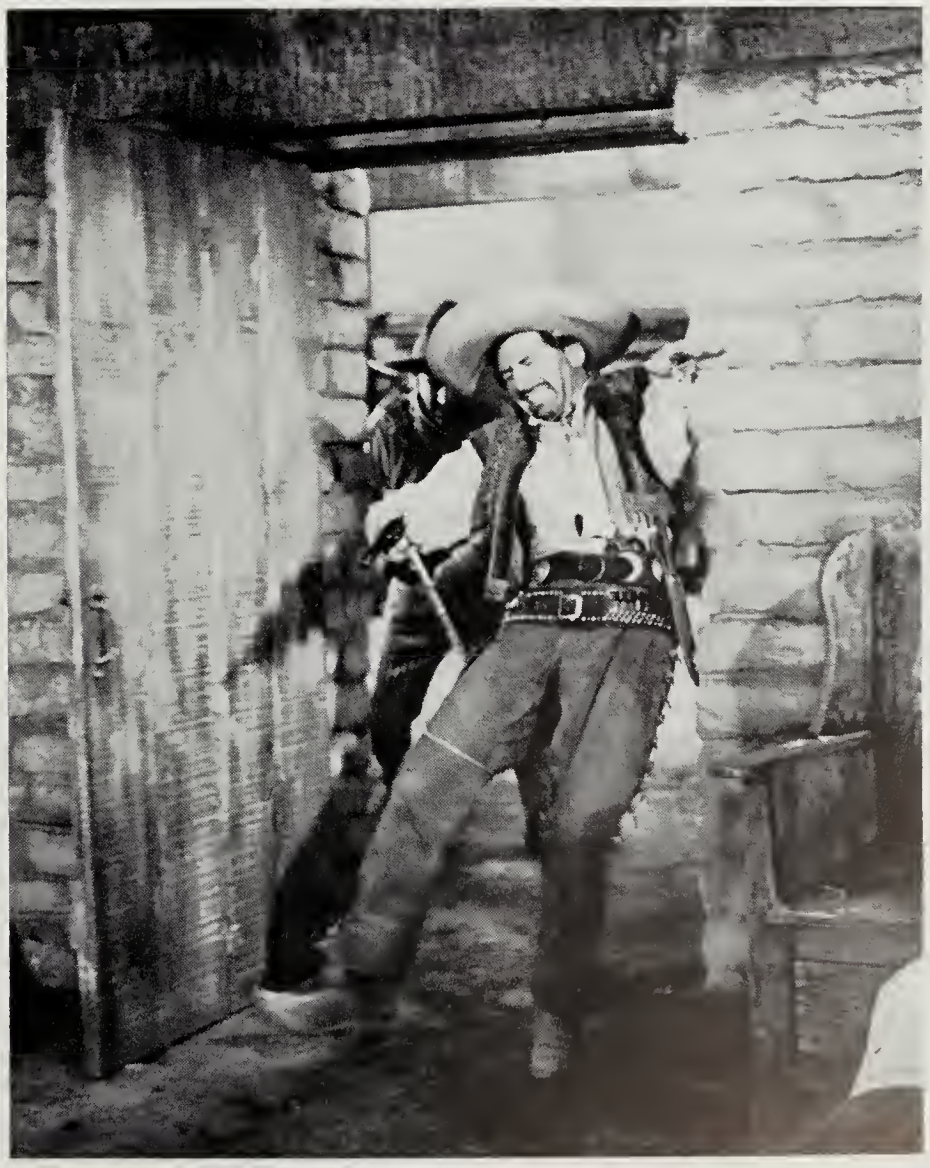
The following Sunday I joined director William Claxton, his assistant, Mack Wright, and production manager Ian McDonald and flew to Las Vegas. From there we proceeded by automobile to Kanab, Utah—a 200-mile trip that required 7½ hours to drive. Kanab and the surrounding countryside is famous for furnishing locations for western movies. The following morning we arose early and started out by automobile in search of locations for scenes for "Stagecoach To Fury." Taking a dusty, winding dirt road, we found what we were looking for about 45 miles from Kanab. It was well worth the trip. The country is similar to Monument Valley, dotted with majestic buttes and odd rock formations. For bringing us to this little-photographed area we were indebted to Fay Hamblin, who acted as guide and who owns a piece of the country himself—about 26 square miles of it.

Concluding our location-hunting journey, we traveled back to Parry's Lodge—our headquarters in Kanab. Here we showered, rested a bit, had a delicious dinner, and then retired, planning an early start for the location area the next morning.

Following the initial look at the locations, director Claxton now began visualizing the shots. So we spent the entire day on this phase of the planning. We surveyed each location site from all angles to determine the best composition with respect to the action involved, all the time, of course, considering the angle of the sunlight. We had every

(Continued on Page 493)





TWO ACTION STILLS from Regal Films' "Stagecoach to Fury," which illustrate besides the tense, dramatic action the good lighting of interiors and players. In keeping with the high action the lighting is relatively high key, with just enough delicate shading at the perimiter to enhance the pictorial composition of the scenes. —All stills are by Cliff King.



A SMALL, hand-held reflector is used to cast fill-light on Glenn Ford as a unique angle shot is filmed from overhead for M-G-M's "The Fastest Gun Alive."

Harnessing Sunlight With Reflectors

Reflectors both supplant and augment the booster light in smoothing out the shadows in outdoor photography.

By ARTHUR ROWAN

THE SUNLIGHT REFLECTOR, which became an important adjunct to outdoor photography in the early days of motion pictures, still remains an important tool for motion picture production. Its function is to redirect some of the sunlight into shadow areas of exterior sets or on subjects when photographed out-of-doors.

While the arc and incandescent booster lamp have supplanted the reflector to some extent, it often is impractical or too costly to employ the booster light, especially on distant locations. And so the inexpensive, portable, and easy-to-use reflector finds frequent use in modern-day production. Attesting to this are the photos reproduced on these pages, which show how reflectors have been used in a number of ways in recent productions.

While all reflectors are basically the same—a flat surface coated with a reflective material—they vary in design, construction and mounting according to the studio. Many years ago, most reflectors were made to fold in the middle and had reflective coating on one side only. Today, most of the reflectors we see in use by the studios consist of a single panel, about 4 feet square. The panel is generally ¼″ or 3/16″ plywood with a thin supporting framework around it to give rigidity, and has fittings enabling it to be mounted on a tripod designed for the purpose. A good closeup view of a typical reflector and stand is afforded in the photo at bottom of this page.

Reflectors are made in three grades or reflective qualities: soft, medium and hard. One coated with flat white paint is called a *soft* reflector. Glossy white enamel paint or aluminum paint is used for a *medium* reflector, while the *hard* reflector—the one that finds the greatest use—is coated with sheet foil or silver or aluminum leaf. The hard reflector is the one that is used in great numbers on distant locations because its hard, brilliant surface projects light great distances. In the middle photo on page 475 may be seen how a battery of these reflectors set side by side provided the fill light necessary to photograph a scene in a shady bend in a mountain stream for a recent Hollywood production. Here *hard*-surfaced reflectors were used to obtain the maximum projection of reflected light.

(Continued on Page 503)



REFLECTORS are invariably used when shooting on distant locations where it is impractical to use booster lights. Construction details of typical studio reflectors and stands may be seen in photo. Reflectors are coated on both sides, are angled with respect to sun to direct light to best advantage for the cinematographer.

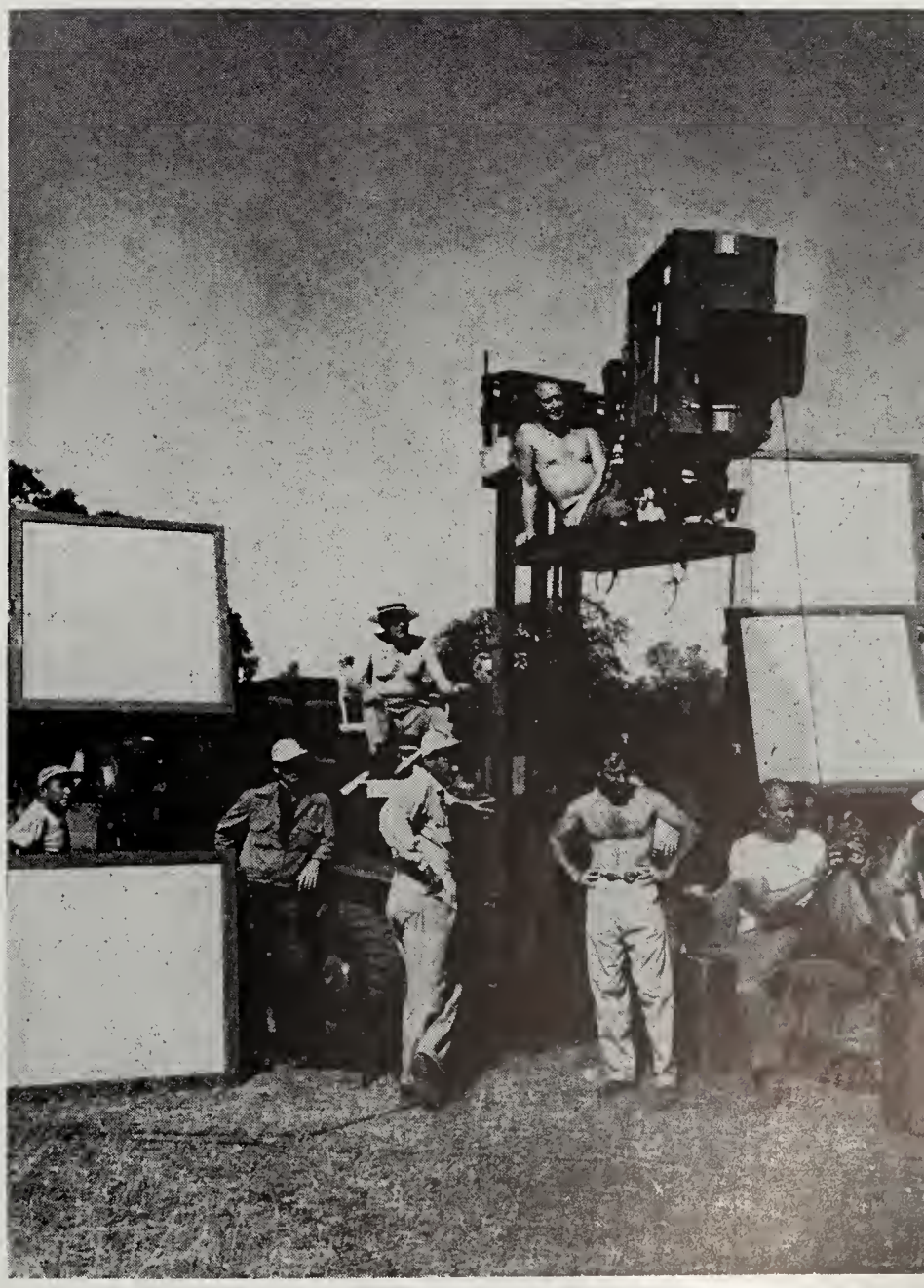


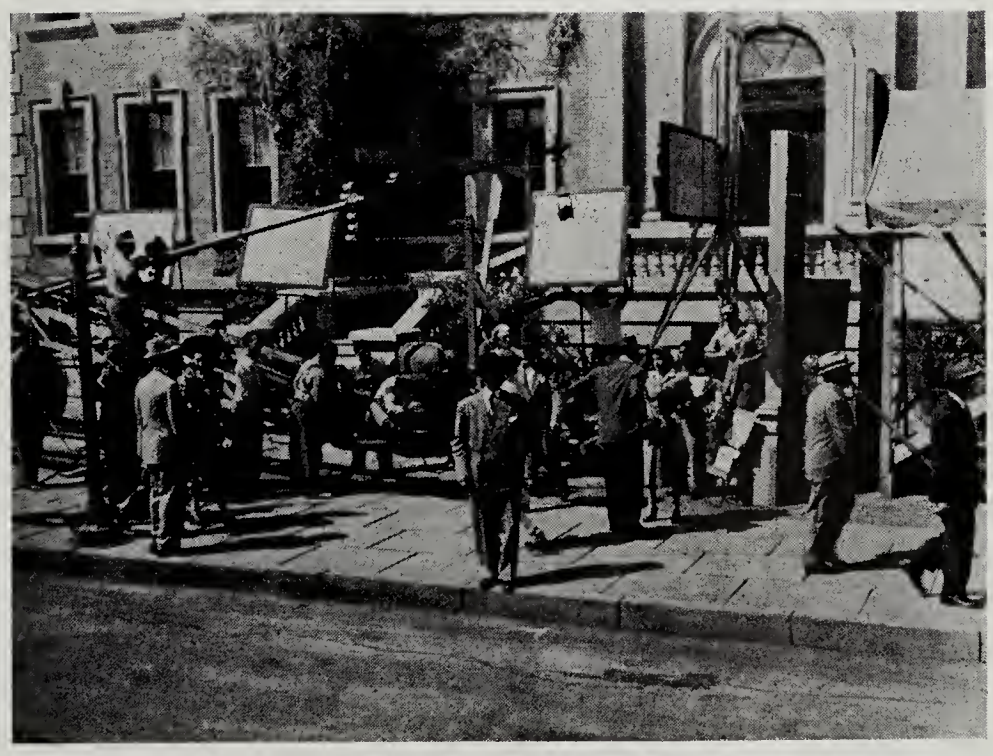
HERE A REFLECTOR is mounted on a separate dolly that precedes the camera and directs fill light on two players riding alongside dolly tracks (far side) and being photographed in closeup for C. V. Whitney Pictures' "The Searchers." Two grips hold reflector at proper angle for desired lighting effect.



NINE REFLECTORS arranged in a row provide the fill light necessary to photograph a scene in a shady bend in a mountain stream for Bryna Productions' "The Indian Fighter."

SHOOTING INTO THE SUN requires ample protection for the camera lens in the form of a sunshade and fill or booster light to provide image contrast. Here solid panel reflectors are used to redirect sunlight into a scene shot against the sun.





BECAUSE reflectors are cheaper and easier to handle, they are often used in place of booster lights in shooting street scenes like the one above for 20th Century-Fox's "The Snake Pit."



OLD—In the days of silent movie making on location, the cameras were mounted on wooden parallels of questionable sturdiness. If camera height had to be changed, it could only be done by adjusting length of the tripod legs.



NEW—To shoot a similar scene today, the camera is moved to the site on a modern carrier such as the "Blue Goose." The camera platform is readily raised or lowered by hydraulic pressure. Running shots can also be made with the equipment.

Location Camera Carriers

By FREDERICK FOSTER

ECONOMICAL LOCATION production has long been dependent upon ability of the crew to get the camera into position and ready to shoot in the shortest possible time.

Before advent of the giant boom and camera cars with hydraulic hoists, location shooting involved time-consuming erection of parallels; and when the setups were in rugged, mountainous country, transporting camera and equipment to the location site was often difficult and hazardous.

The solution to the problem was achieved when studios decided to put the camera on a rugged mobile carrier that would not only transport camera and equipment from studio to location site, but provide a suitable mounting for the camera while shooting was in progress and incorporate some of the



THE "Blue Goose"—first practical all-purpose location camera carrier with hydraulic lift and four-wheel drive—aids Nat Holt Productions shoot exteriors for a "Western."



WARNER BROTHERS' answer to the "Blue Goose" is this 4-wheel-drive camera and equipment carrier with hydraulic hoist affording wide range of camera heights.



UNIVERSAL-INTERNATIONAL's location camera car and equipment transport. Camera platform is hydraulically operated and the mast is equipped with hydraulic stabilizers.



OLD—Above scene is typical of many location shooting assignments which required erection of wooden parallel for the camera, not to mention cost of moving in the lumber and the men to build it. Here a scene for a Tom Mix feature is about to be filmed.

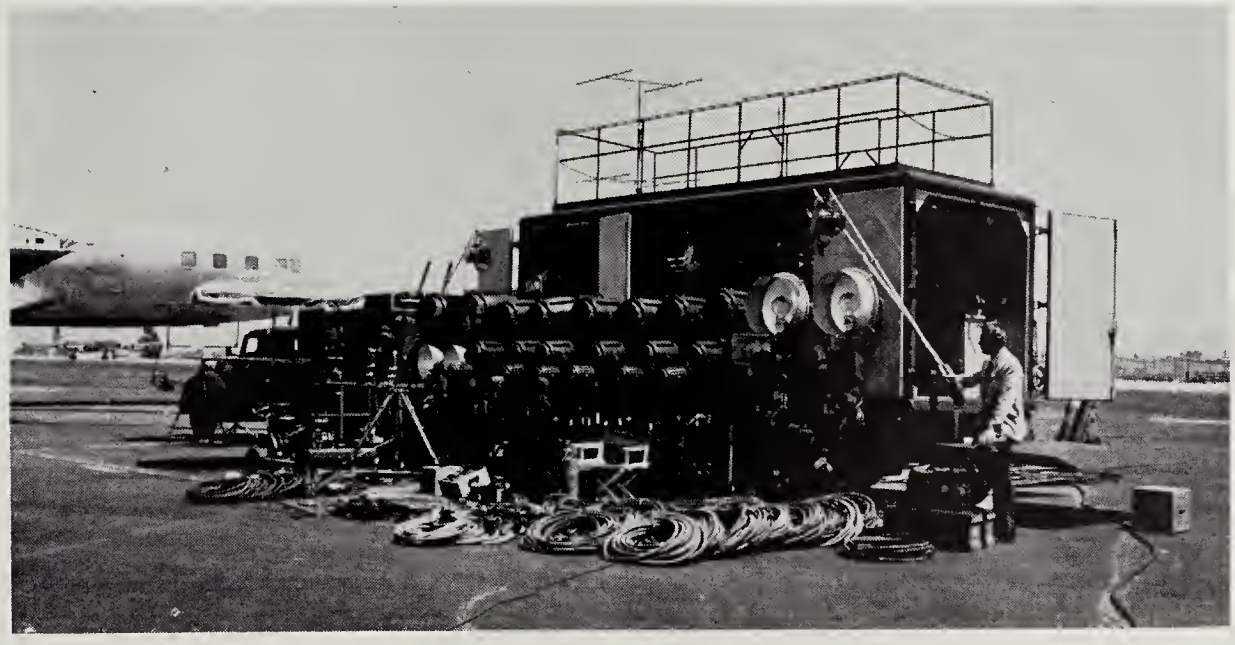


NEW—To shoot scenes in rugged country similar to the location pictured at left, the modern-day producer utilizes one of the giant Chapman Booms. One may be seen in this photo projecting into the scene from the left and shooting action staged below.

conveniences of the camera boom used on the sound stage.

The first attempt in this direction was when a studio loaded its biggest camera boom on a truck and sent it out to a rugged western location. It afforded some mobility, eliminated the need for erecting parallels, and provided for using the camera in a wide range of

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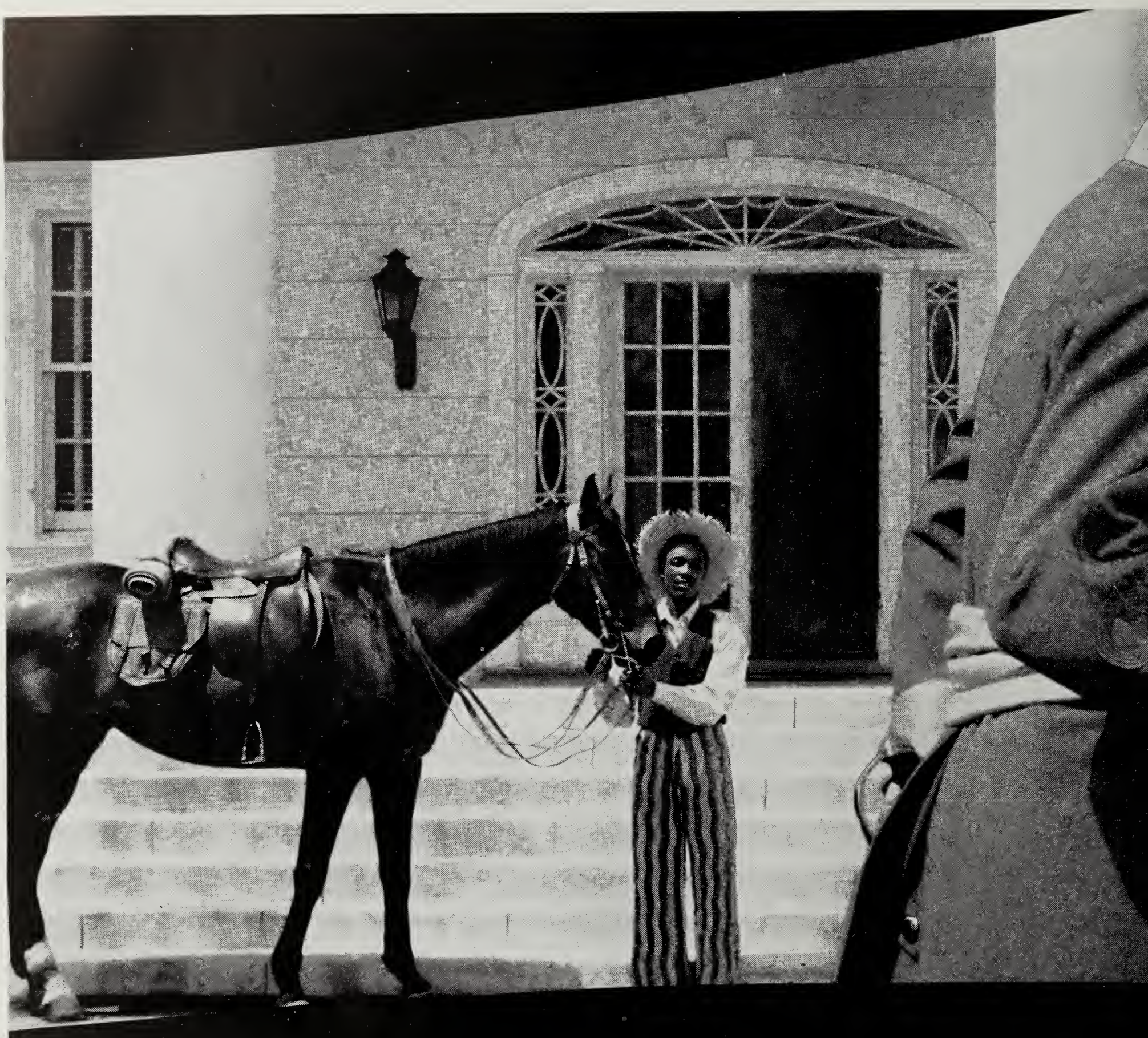


FILM PRODUUCTION Unit of Douglas Aircraft Company, Santa Monica, designed this equipment carrier that accommodates all the equipment shown, including camera tripod and dolly. All "elevated" shooting on location is done from top deck of truck.





TWO VIEWS of the Chapman heavy-duty camera boom designed for rugged location use. It affords range of camera heights from ground level to 30 feet; will go anywhere a Jeep can go.



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Illusion achieved through use of right lenses and camera angles.



ALMOST EVERY "western" movie has a chase scene that culminates in a two-man duel in which the one receiving the fatal bullet goes to his death in a plunge over a cliff. In above shot gunman peers cautiously over cliff toward adversary.



AS BULLETS WHIZZ overhead, he ducks, then inches forward for a better view so he can return the shot. This photo and one at left were made on location atop a rocky mountain. Climax of sequence will be staged and filmed on a prop rock back at studio.



COUP DE GRAS. Enemy's bullets have found their mark and gunman starts topple from top of rock. Actual height of rock is concealed from audience by shooting in close and excluding extraneous features that would reveal real height.



CULMINATION OF FALL is filmed on "prop" rock on studio back lot with camera in reverse position. Concluding shot of sequence will be filmed on location with a "dummy" hurtling through space from top of real cliff, and landing finally at the base.

THERE'S A LIMIT to the chances that Hollywood's famous stuntmen will take when doubling for the stars in dangerous action. So when the script calls for the hero—or the villian—to plunge from a cliff as, for example, to climax a gun duel, the art of illusion is brought into play and the actual plunge is *implied* through skillful photography.

The photos above illustrate a rather simple instance of this kind. The scene involves a gunman in a duel with another in what appears a mountainous locale. Height of the rock on which he crouches has been suggested by a low-angle shot that begins the sequence. His subsequent action was filmed close up to retain the illusion of height and to build up suspense.

In the first photo, he peers cautiously over rim of the rock towards his adversary, at the same time inching forward in order to get him in his sights. In the next photo he is seen suddenly hugging the rock as his adversary's bullets whizz overhead. In the third photo, another bullet has found its mark and the gunman slumps forward and starts

(Continued on Page 502)

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GATHERING exposure data during the shooting of an industrial film for the American Society of Tool Engineers Exposition in Chicago by James Mitchell Associates, using the new high-speed Anscochrome color film. Left to right are producer Mitchell, cameraman Dick Wiacek, and Ansco representative Bill Metzger.

Shooting An Industrial With Ansco's New, Fast Color Film

New Anscochrome produces excellent results recording low-key interiors with exposures based on ASA rating of 125.

By JIM MITCHELL

James Mitchell Associates, Detroit, Mich.

BREATHES THERE an industrial film producer who has not cringed at the familiar statement: "Now, then, we want it in color but we have got to keep the budget down."

Recently this happened to us, and in usual fashion we hedged and gave the client the stock answers about shooting color. Well, it was fortunate for us that they would not accept the statement "it can't be done."

The determined client was the American Society of Tool Engineers. Every two years this Society sponsors an Industrial Tooling Exposition in major cities throughout the U. S.—big shows, drawing 35,000 to 40,000 of the nation's top production and manufacturing executives and engineers.

The recent show in Chicago was the largest yet with 530 exhibits covering seven and one-half acres of floor space in the Internationl Amphitheatre. Products shown ranged all the way from small hand tools, jigs and assembly devices to huge stamping presses and precision machine tools. In between were all the related products — coolants, electronic controls, materials handling equipment, precision control and inspection equipment, etc.

ASTE's problem was how to record this event on film with maximum impact at least cost. It was their original intention to have produced only enough film of this exhibit to provide a maximum of five minutes screen time in a 27-minute color motion picture. In effect, they wanted to have their cake and eat it, too, because along with the cost problems, the footage we shot had to provide a good color match with the rest of their film.

These people are engineers and to them "anything is possible." They had heard about some color film that was pushed to ASA 125. Yes, the Ansco people had an outdoor film that had enjoyed some success at this speed, but this was outdoor film and to use it indoors would mean filtering and this might cancel out the high speed rating and all its advantages. In addition, we had not seen the area that we were to shoot, and with budget limitation and the nature of the job, we "had to shoot with existing light." Indoor shots with existing light? Impossible!

At this point, we began to take stock of ourselves. Who were we to say that it was out of the question? So—it was only logical that we turn to Ansco, the people that were doing revolutionary things with 16mm color film. A call to the Binghamton office put us in touch with Ed Stambolian. We were assured that we could convert the outdoor to indoor, but why do that? He then went on to explain that they were releasing a new indoor film that could be pushed to ASA 125. Had it been used commercially? No—we would be the first to use it for an industrial film. Could they send us a hundred feet so that we could run a test on it?

"Sure thing—I'll send it out today."

I went back to the Tool Engineers and told them that we were having some new film shipped to us and that we would run a test on it. We had never shot any color this fast, and frankly, we were quite dubious. Fortunately there was a Travel Show in progress, and so we could come close to approximating the conditions we would face in shooting the show in Chicago.

Dick Wiacek was the cameraman on this job. In shooting the test footage, we were concerned with only one question—Can it be pushed to 125, and what will it look like?

All we did was take a light reading and shoot. In one spot and strictly for

a gag, we shot footage of a film showing. Then the big wait for the results. The ASTE staff thought the test was terrific! The footage of the movies was even quite satisfactory.

So—we were commissioned to film the Tool Show. Ansco sent Bill Metzger to Chicago to work with us. Arrangements were made for special processing, which allowed us to see the rushes late that day.

The response of the ASTE Officers and its National Public Relations committe was most enthusiastic. Of course, there were a couple of perfectionists who were comparing the finished product to the best of Technicolor. True there was some graininess in the film, but under the circumstances, it was not objectionable, and the color was exceptionally good. Proof of the enthusiasm for the footage was manifested in an expansion of the original film production plans into a fifteen-minute picture that would be shown to 135 chapters of the Society.

So much for the basic story. But what about the technical side? Though we didn't know the conditions under which we would be shooting, we did know that in order to do the job we would have to shoot with existing light and crowd the film to the limits every foot of the way. On this job we used the Bell & Howell 70-DL camera because of its portability. In addition, it gave us a shutter speed of 1/40th of a second at 24 frames. This gave us the extra exposure we needed. We also used the new B & H f/.95 lens. There were times when it came in handy. For determining exposures, we used the Norwood Director meter.

In taking light readings we would take a general overall reading because of the spottiness of display lighting. In compensating we would go ¼ to ½ stop under for light areas, and for dark areas, we would go ¼ to ½ stop over.

The latitude of the Ansco stock gave us good color rendition in areas where the ratio was as high as 6/1 or 7/1. Resolution, latitude and the tremendous depth of the film amazed us. In a situation such as we were in, one runs into seemingly impossible conditions, for there were extreme variations in lighting. At times we had readings of only four foot candles, and so were pressed to get the limits of the film. On-the-spot calculations indicated that such shots were nearly impossible . . . but ASTE wanted it.

In getting such shots, the action in the film had to appear normal. To do this, we dropped the camera speed to 20 frames. With the B & H this gave us a shutter speed of one thirty-fifth and, in turn, allowed us more exposure time — approximately ¼ stop more. This, coupled with the f/.95 lens gave us optimum results under seemingly impossible light conditions. Results were satisfactory. We must add, though, that under these conditions, the color would drop off to the red, but was none-the-less acceptable for our purposes.

In using the new Ansco color film,

(Continued on Page 492)



THE Mitchell production was essentially a factual account of the ASTE's 1956 exposition and contained many shots such as the one above. Not only did the color hold up in shots such as this, says Mitchell, but they demonstrated the film's excellent resolving qualities.



SHOTS OF conferences, most of which were filmed in a lower key of light, "pushed" the new Anscochrome film to its outside limits, says producer Mitchell.



SHOOTING A SCENE enroute to summit of Mt. Washington is CBS Special Assignment Crew headed by author Irving Heitzner, at camera controls. Others in photo, from left to right, are: soundman Addison Tice; commentator Robert Northshield; and film editor John Dullaghan.



ON THE SUMMIT, wind velocity reached 75 miles per hour. Here it was necessary for camerman Heitzner to crawl on his hands and knees and shoot with an Eyemo camera.

Odyssey Of A Roving TV Cameraman

Quest for footage for CBS' "Oddities In The News" has its climax on blizzard-swept mountain top.

By IRVING HEITZNER

MOST YOUNG FELLOWS WITH a yen to become a motion picture cameraman invariably think of working behind a Mitchell camera on the sound stages of the major studios in Hollywood. But not all the film exposed daily in motion picture cameras originates in the glamorous atmosphere of the movie studios.

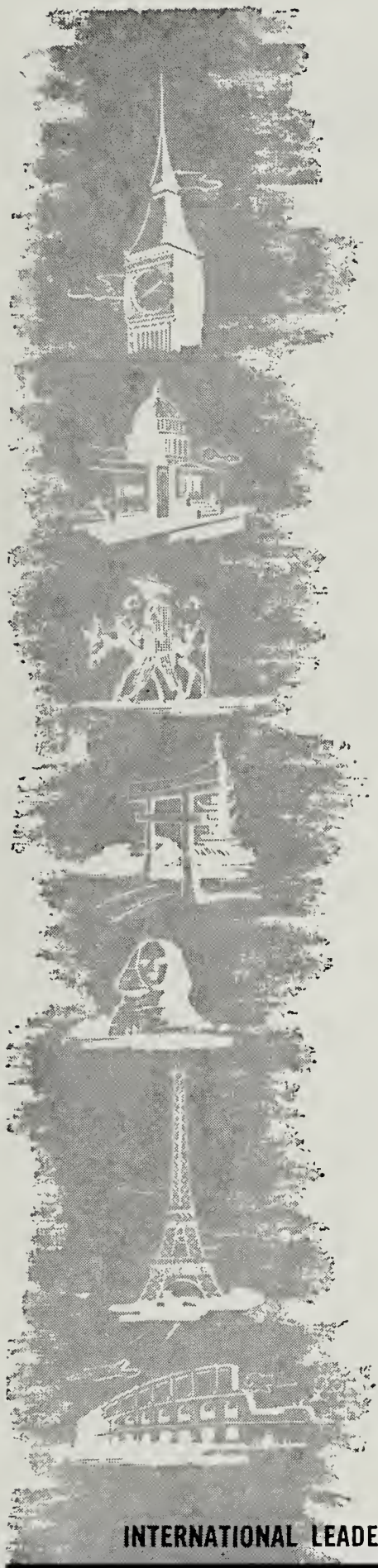
Now that television has become the formidable entertainment medium that it is, a considerable portion of daily TV programming originates on film. Besides the hour and half-hour shows that originate on film in studios in Hollywood and New York, still other programs, like CBS' "Oddities In The News," are made up from factual material shot by roving cinematographers—like myself. In this type of work, stamina, resourcefulness and quick thinking are valuable assets.

This became all the more apparent to me as I reflected on a recent assignment for Columbia Broadcasting Company to shoot material for its "Oddities In The News" series—an assignment that was to take me to the summit of blizzard-swept Mt. Washington in the White Mountains of New England. Here, because weather conditions in winter months approximate those of the Arctic, the U. S. Air Force has established a proving ground where are tested some of its most important aeronautical instruments and equipment. The United States Weather Bureau has also established a station there, and WMTM-TV has its TV transmitter there. All these factors had an important bearing on my film assignment.

On the morning of February 1, 1956, I gathered together my crew and associates consisting of sound man Addison Tice, news analyst Robert Northshield, and film editor John Dullaghan, and prepared for the ascent. Our equipment consisted of one sound camera with amplifier, and a hand camera with a battery pack having ample power to operate it in exposing 10,000 feet of negative. In addition, there was the personal baggage of the party.

After reporting to Capt. John Hancock, USAF, in his office at the foot of the peak, we received such items of Arctic clothing as parkas, heavy woolen mittens, and sun visors. This, along with

(Continued on Page 500)



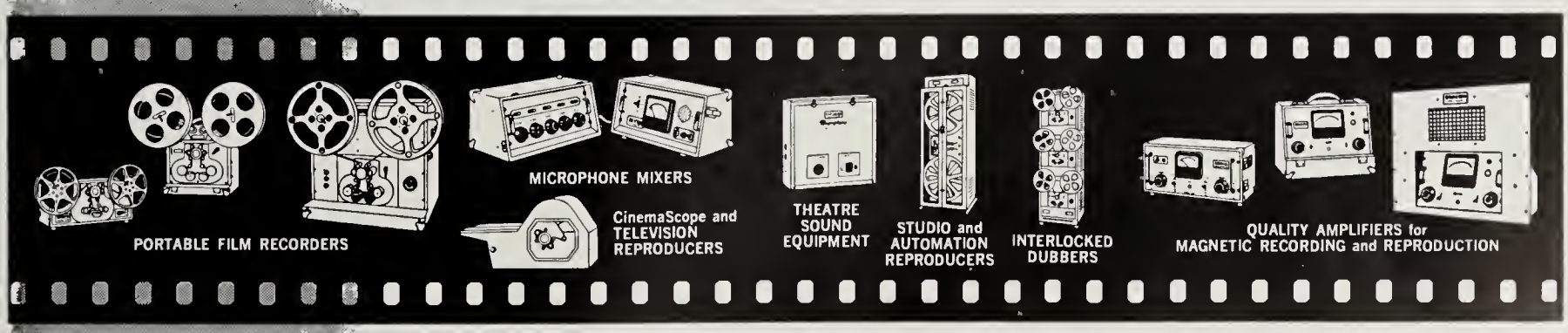
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3-Perforation Film Frame Spacing Proposed

"Framelines" between images are getting wider, due to development of wide-screen aspect ratios, resulting in wasted film stock and decreased projector efficiency

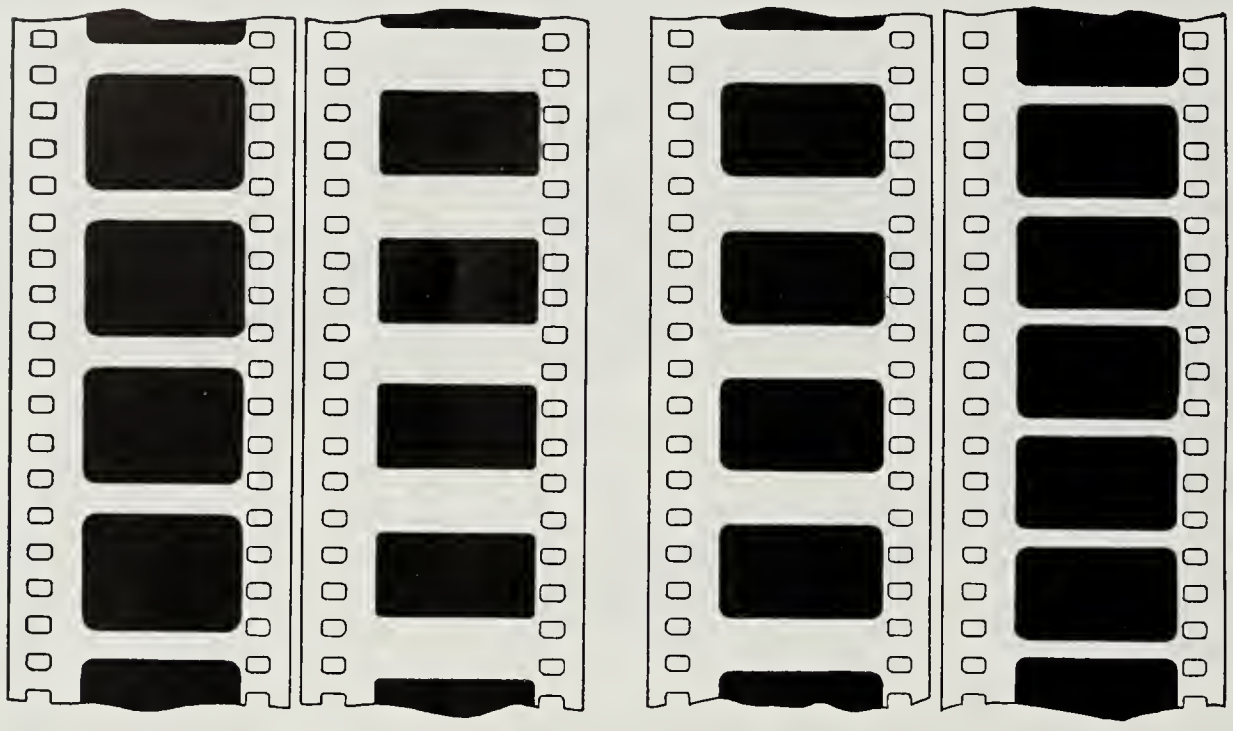


FIG. 1—Comparative "frameline" spacing of standard and wide-screen film images is illustrated above. The author proposes reducing the "frameline" areas by employing a 3-perforation instead of conventional 4-perforation pulldown intermittent and re-positioning of the frames on release prints.

FOREWORD—Robert A. Mitchell, writing in the July, 1956, issue of *International Projectionist* ("A Common Sense Approach to Screens, Apertures and Aspect Ratios"), has pointed out the percentage of wasted film in every 1000 feet that goes through a projector, due to the space unused between wide-screen images. He suggests that print economies can be effected and efficiency of screen projection increased by making prints with the images closer together and employing an intermittent pulldown of 3, instead of the standard 4, perforations per frame of film. Part II of his article dealing specifically with this subject is reprinted here by special permission of the publisher of *International Projectionist.*

—EDITOR

THE SILENT-FILM camera aperture was sufficiently large (0.97" x 0.72") to allow for small differences in framing and for slight misalignment of the projector lateral guide-rollers. The sound-film camera aperture was also standardized at slightly over-size dimensions (0.87" x 0.64") for the same reason.

Now, the standard frame-shift performed by the intermittent mechanism of a 35mm motion-picture camera or projector involves a longitudinal distance of ¾ inch; or, as 35mm film is perforated, a distance of 4 sprocket holes along each edge of the film.

With the vertical dimension of the silent camera aperture, the thickness of the "framelines" between the individual frames was only 0.75 — 0.72 = 0.03 of an inch, hence practically all of the picture area of the film was utilized in silent-picture photography. It is otherwise in the case of sound-movie photography. In order to maintain the desired 4:3 proportionality of the frame images, the framelines necessarily became rather thick (specifically, 0.75 — 0.64 = 0.11 inch).

The loss of picture space in standard sound films is by no means serious, even though it represents a waste of 110 feet of film in every 1,000-foot reel —110 feet which must uselessly be pulled down by the camera intermittent without being exposed. The loss is slightly greater in projection, of course, because the projector aperture is slightly smaller than the camera aperture. In a aspect ratio soundfilm aperture, 150 feet of film out of every 1,000 feet is never projected to the screen.

When non-anamorphic wide-screen apertures are used in the projector, the waste of footage—film which must uselessly be pulled down by the intermittent —assumes alarming proportions. In every 1,000 feet, for example, the following footages of film are wasted by the various non-anamorphic apertures:

ASPECT RATIO	WASTED FOOTAGE IN 1,000 FEET
1.375/1	150
1.65/1	250
1.66/1	253
1.75/1	279
1.85/1	304
2/1	338

Figure 1 shows what portion of the picture area of the film is actually projected upon the screen when 1.375/1, 1.85/1, and 1.66/1 a.r. apertures are employed.

The trend toward wider screen images, as we said before, is not wholly unattended by unfavorable consequences. For musical extravaganzas and "spectacular" productions involving vast throngs of people and panoramic scenery, the extreme CinemaScope aspect ratios serve admirably. Yet what a pity it would be if *all* movies were CinemaScope spectaculars!

The dramatic motion picture is intrinsically *emotional;* and emotion implies an intimacy of thought and feeling translated into photographic proximity to the individual actors, either singly or in small groups. The closeup shot, as well as the "roving" camera and "rapid" cutting by the film editor, is part and

parcel of movie making technique, and always will be.

It is desirable, therefore, that a compromise be effected for the best presentation of non-anamorphic films. CinemaScope is excellent in its own field, and its extreme aspect ratios should be utilized, wherever possible, for full panoramic scope. But the more *sensitive* dramatic photoplay is still best presented in less extreme aspect ratios, and, we may add, in monochrome instead of color. In expressing these views, the writer is merely echoing the opinions of many highranking movie producers who are increasingly reverting to the wider *dramatic* scope of the conventional aspect ratio and more or less ignoring the wider *visual* scope of the panoramic screen.

If the old conventional aspect ratios of 1.333/1 and 1.375/1 are considered a bit too restricted as regards the horizontal dimension, then certainly the 1.65/1 and 1.66/1 ratios represent the maximum (and perhaps the most desirable) width-to-height ratio that preserves the "fluidity" of screen drama—the use of closeups intercut into medium shots, "dollying" of the camera, etc. And yet these aspect ratios are wide enough to enhance the visual grandeur of panoramic long shots.

This writer definitely agrees with those motion-picture producers who advocate standardization of the 1.65/1 a.r. in the interests of pictorial framing. But universal exclusive use of the 1.65/1 ratio for regular, non-anamorphic prints gives rise to technical problems of film waste due to overly thick framelines, overworked projector intermittents, heating of the film by the arc lamp, and the number of frames per second needed to provide smooth, flicker-free projection at the highest light levels. As previously stated, the conventional 1.375/1 a.r. results in a waste, due to frameline thickness, of 15% of the total length of the film, while the 1.65/1 a.r. wastes fully 25%.

The waste of film footage caused by the unused frameline areas is reduced in CinemaScope projection by the comparatively large apertures. CinemaScope framelines, being relatively thin, result in only 3.5% of unshown film length. The larger picture areas of CinemaScope films increase image definition and improve the focusing characteristics (depth) of the projection lens.

By employing an intermittent pulldown of 3, instead of the standard 4, perforations per frame of film, the resulting filmshift distance of 9/16 inch (0.5625″) is enough to accommodate the 1.65/1 a.r. projector aperture (0.825″ x 0.500″) and permit the use of a necessarily larger camera, or printer, aperture (proposed dimensions: 0.87″ x 0.55″). These dimensions result in an unused film-length in the camera of only 1.25%, and in the projector of only 6.25%. These figures compare favorably with the unused-length percentages in silent-film standardization, namely, 3% in the camera, 7.05% in the projector.

Figure 1 is a side-by-side visual comparison of standard non-anamorphic release print and the proposed "3-hole" release print intended to be shown in aspect ratios of 1.65/1 and greater. Note that the 1.65/1 (or 1.66/1) a.r. projector aperture now in use for 4-hole film is to be used for 3-hole film. *The picture area is NOT reduced by reducing the thickness of the framelines!*

A number of projection technologists have advocated the 3-hole frame shift for 35mm film. There is nothing new in the proposal. It is worthy of serious consideration, however, first because of the necessity to restandardize the a.r. of normal-film projection, and secondly because the 3-hole pulldown offers several distinct advantages in addition to utilization of practically all of the picture area of the film.

There are 16 frames per foot on standard 4-hole film. On 3-hole film there are 21⅓ frames per foot, or 64 frames per 3 feet. If the present 24 frames per-second rate of exposure is kept, 3-hole film will travel only ¾ as fast as 4-hole film, with a running time per reel 1⅓ times that of present film. Instead of 1½ feet per second (90 feet per minute), the travel rate of 4-hole film, the 24 frame/sec. 3-hole film will run at the rate of 1⅛ feet per second, 67½ feet per minute).

If, on the other hand, the linear running rate and showing time per reel is preserved in 3-hole film, the frame rate will be increased from 24 to 32 frames per second. The more rapid frame rate will result in a field rate on the screen of 64 exposures per second when regular 2-cutoff projector shutters are used. Projected pictures are virtually flickerless, regardless of light level, at 64 exposures per second.

Yet another alternative exists, and one which is apt to be of greater interest to television engineers than to theatre-movie technologists. "If the frame rate of professional film is increased," argue the TV people, "it should be changed to 30 frames per second, the exact submultiple of the American TV field rate of 60 interlaced scannings per second."

Let's see how the 30 frame/sec. rate affects running time and film consumption in the case of 3-hole film. It will change the travel rate from the present 1½ ft./sec. (90 ft./min.) to $1\frac{13}{32}$ ft./sec. ($84\frac{3}{8}$ feet./min.). Therefore, 30 frame/sec. 3-hole film will run $\frac{15}{16}$ as fast as 24 frame/sec. 4-hole film, and the running time per reel will be 1-1/15 that of present film.

The principal disadvantage of 3-hole film standardization is the non-interchangeability with present-day 4-hole CinemaScope prints. The anamorphic process could be readily adapted to 3-hole film, however; and by utilizing the whole 0.825″ x 0.500″ projector aperture and an anamorphic expansion factor of 1½, very high quality images in an aspect ratio of 2,475/1 would be obtained. (As an alternative, and with a slight sacrifice of picture quality and brightness, two 0.1-inch strips could be subtracted from the frame width for 3-channel stereophonic sound, leaving a projector aperture measuring 0.625″ x

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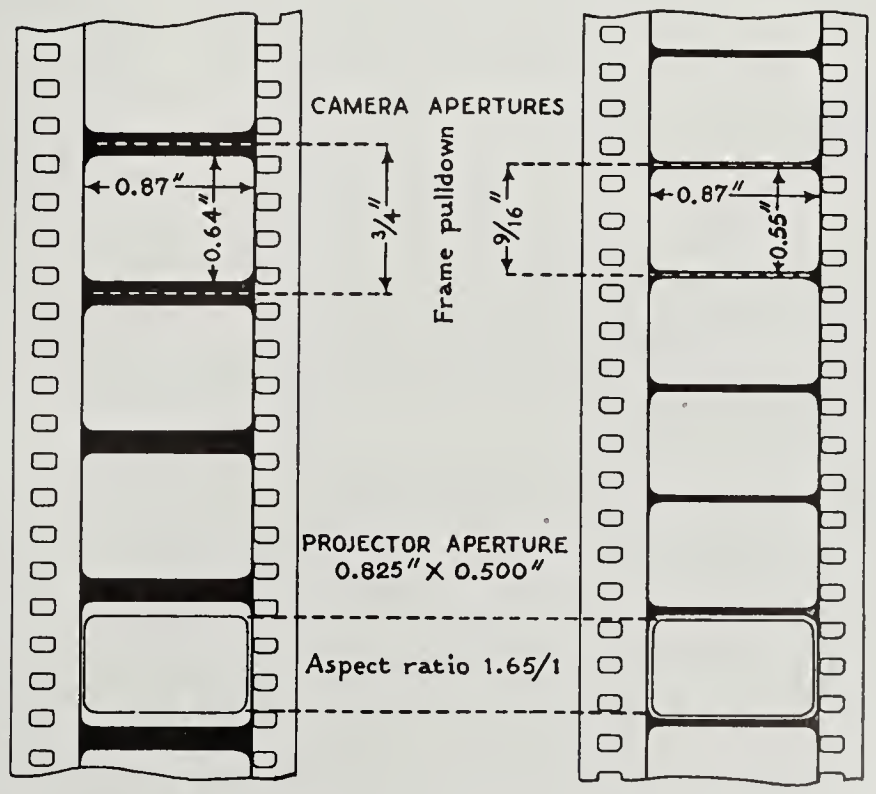


FIG. 2—Printing differences in 4-hole and 3-hole frame placement. Note that the same 1.66/1 (or 1.65/1) aspect ratio wide-screen aperture is used with both kinds of projection prints. Higher aspect ratios may, of course, be used with the 3-hole frame shift.

Directing The Inexperienced Cast

The success of an amateur photoplay depends as much on capable acting as on the photography. Here's how to get professional results when employing amateur players in your movies.

By HAROLD BENSON

ONE OF THE greatest advantages the the professional director has over his amateur counterpart is his trained and well-paid cast. The amateur knows the results he wants; but if he tried to get them by keeping his heroine kneeling for hours on a stone floor like Dryer, or bullying his actors as mercilessly as von Stroheim, he would soon find himself without a cast at all.

His players are almost always friends, neighbors and relatives who have volunteered their services. They're usually happy enough to act for the simple pleasure of seeing themselves on the screen. Most amateur directors tend to accept any standard of performance in their delight at finding people prepared to take part—though there are a few who conceal their gratitude so thoroughly that they're apt to antagonize the cast before they even begin to shoot.

How can a director avoid these dangers? Awkwardness, camera consciousness, the devasting smile or giggle at the wrong moment—these are the problems which make every cine amateur at some time swear to take up another hobby. Luckily the mood passes; but the difficulties remain.

The best time to explain to actors that the director has to be and is going to be the boss is at the very beginning. Casting is nearly always a matter of listing acquaintances physically suited for each role, and working through the list until someone agrees. This is not only the moment to relieve yourself of all your gratitude and thanks, but also to warn the person that he or she will be expected to act under orders.

Insure, gently but firmly, that all your players understand that you're the person with the final say if there should be any differences of opinion. Of course, once they've agreed to kow-tow, it's up to you to prove that you know what you're doing. Any dithering or uncertainty leads, as often as not, to that humiliating situation in which the director, dubious about a certain effect, asks an actor for his advice and is immediately met with, "How should I know? *You're* the director!" This is hardly likely to result in amicable relationships among the unit, or a good film.

At the same time, don't let your cast feel that there's no scope for their own brainwaves. Tell them at the outset that you'll welcome their suggestions throughout the production. Even if they come up with hopelessly impracticable ideas that only show they don't know a meter from a tripod, always thank them and explain *why* their schemes won't work.

It's astonishing how often an enthusiastic cast will offer really useful and original notions. One of my favorite shots in my first comedy was suggested by a twelve-year-old Cockney kid. I was shooting scenes of a group of panic-stricken Boy Scouts fleeing from the path of a speeding cyclist when this



ALTHOUGH Harry Ruffner and his wife, Lee, used all non-professionals in their prize-winning 16mm film, "In The Heart of a Man," they achieved a professional quality in the production through forthright direction of their players. The Ruffners are members of the Westwood Camera Club, San Francisco, Calif.

youngster said, " 'Ere, mister, wot abaht me little bruver? 'E can't arf shin up a lamp-post!" Surprisingly enough, his brother, though too young for the Scouts really could climb a lamp-post like a monkey. I dressed him in uniform and shot him at 8 f.p.s. as he went up, and got a perfect climax for my sequence.

But however helpful your players are, they are the ones who need assistance, especially if they're facing the camera for the first time. A nervous director makes a nervous cast. Aim at being constantly authoritative in your manner—but never lapse into uncongeniality.

The script is always a problem when dealing with amateur actors. Only you can decide, according to your circumstances, whether you will get the best results by explaining the whole shooting script shot by shot (which often worries the cast), by letting them see only a synopsis (which often strikes them as rather vague), or by merely telling them exactly what to do without explaining how their part will fit in the finished production (which invariably baffles them completely).

Personally I feel that the more important a role, the more important it is that the actor should understand the script. I always go over the whole thing with the principal members of the cast, but I don't usually bother to describe more than the relevant sequences to those taking the smallest parts.

One weakness common to all inexperienced actors is the almost irresistable desire to glance at the camera. Perhaps they expect to be able to see the film rolling past the other side of the lens. The best cure is to show them the camera before you begin shooting, and to give a broad explanation of it to anyone interested. When you've finished, ask them if they've seen enough of the camera. If they agree that they have, tell them that it's just as well, because they're not to look at it again under any circumstances. Then explain why.

You'll be surprised how effective such an apparently fatuous build-up proves. A straight plea is all too quickly forgotten; but a simple little demonstration like this seems to stick in the memory.

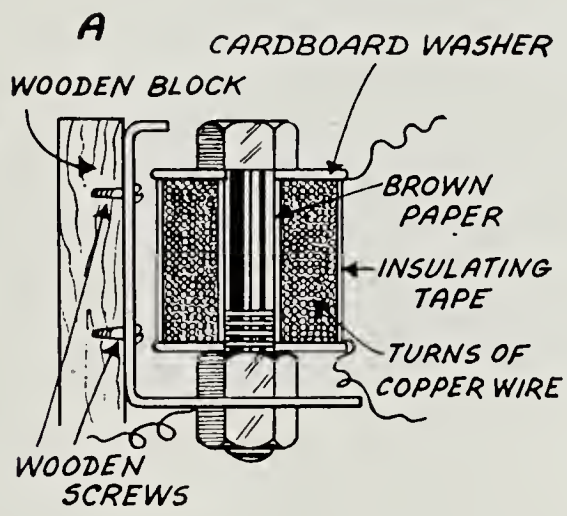
Always encourage your cast to underplay rather than over-play. For one thing, you'll find few of them realize how close to the audience the camera brings them, and thus tend to overact in any case. For another it's a fortunate fact that an audience will "see" an appropriate expression on a face that's actually expressionless. (You may have heard the true story of the director who intercut identical C.U.s of a famous actor with shots of a bowl of soup, a child and a coffin—and the critics raved about the subtlety with which the actor showed hunger, tenderness and grief.)

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A "Do-it-yourself" Remote Control For Cine Cameras

How a discarded doorbell magnet can be used to operate your camera from a distance for nature photography, stop-motion, or animation.

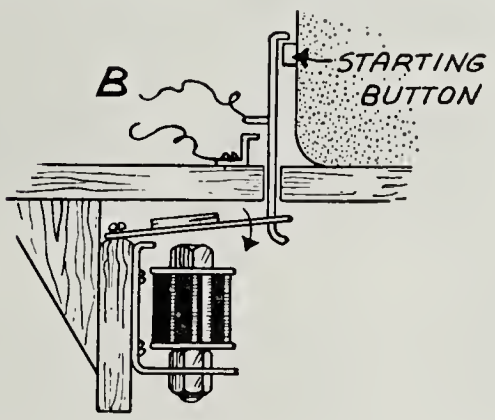
THE CONVENIENCE of starting and stopping the camera by remote control is virtually essential to photographing wildlife, animated action or subjects in "stop-motion." While there are a number of devices now on the market for



this purpose that are readily adaptable to most of the popular cine cameras, the ingenious cinefilmer can easily rig up an effective electrical control in the "do-it-yourself" manner in vogue today.

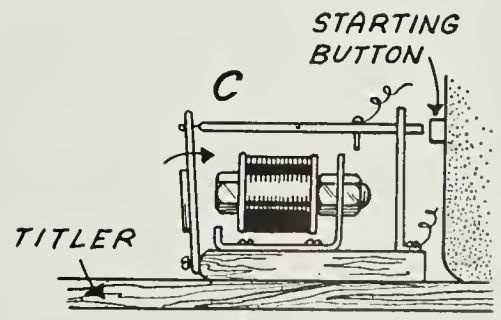
Such a device is shown in the accompanying illustrations, and it may be used with a wide range of 8mm and 16mm cameras. It operates on the order of a solenoid in that a charge of electric current passing through the winding of a magnet activates a lever that contacts the camera starting button on impulse.

For the do-it-yourself builder, the essential item to start with is a small electric magnet which may be removed from a discarded doorbell. Where a more powerful magnet is required to actuate the camera starting button, the reader can build a magnet of the required size and power, following the details given here and illustrated in Fig. A.



Two heavy washers 1⅛" in diameter cut from cardboard are fitted on an iron bolt. The bolt should be wrapped with several turns of brown paper, then wound with enameled or cotton-covered wire of approximately 32 gauge. Before starting the winding, punch a small hole in one of the cardboard discs and insert end of the wire through it to form one of the electrical leads. Proceed to wind the wire around the iron-bolt core until it fills the spool to the edge of the cardboard discs. Through another hole pierced in the same cardboard disc, insert the end of the wire, which will serve as the second electrical connection for the magnet.

Where a magnet from a doorbell is used, it may be powered by two or three standard dry cells, or from a conventional doorbell power transformer. Where the camera requires greater thrust of the remote control to actuate the release button, then power from an automobile storage battery is recommended.



After the magnet is mounted on a base or framework, as illustrated, the next step is to attach the lever that is activated by the magnetic impulse. This is a narrow strip of steel reinforced at point of contact with the magnet with a "button" or disc cut from the same metal. This strip should be hinged and swing free. The simplest manner for achieving this is simply to drill a hole in one end and drive a small nail through it to secure it to the base—but without driving the nail in altogether.

Figs. B and C show application of the magnet in operating two types of camera starting buttons—the pull-down type and

(Continued on Page 506)

Lighting For Mood In The Motion Picture

Before you can begin to light your scenes, you must know the mood of the story you are about to film.

By SAL PIZZO

BEFORE BEGINNING this discussion on lighting, I wish to state that my wife, Nadine, and I work as a team, combining our individual experience in theater and painting in order to reach a fuller understanding of the motion picture medium. We do not consider ourselves authorities on lighting, but rather as serious students of lighting. What we know we have learned the hard way—by trial and error. The lighting techniques employed in the production of our three films, "The Nativity," "The Fall Of The House Of Usher" and "Elyra," resulted from a great deal of experimentation—and a strong desire to create mood with light.

Lighting, to us, does not mean the flooding of a set with sufficient illumination to enable one to shoot at a certain F/ stop. It means the kind of lighting that will create atmosphere and add reality to a story. Unfortunately, the amateur filmer has been duped by some advertisers into believing that two lights on a camera bar is the answer to all his lighting problems. Some books on amateur movie-making also strongly advocate the use of flat or front illumination for shooting color film. My wife and I dared to question these statements. We proved to our satisfaction that the amateur *can* achieve interesting lighting in his movies, and that he can do it without the benefit of expensive professional equipment.

Let us consider for a moment the equipment necessary to produce good lighting for our movies. In the professional studios one finds a multitude of different kinds of lights, stands, reflectors, scrims, booms and dozens of other items that few of us even knew existed. We shall not concern ourselves with the fancy professional equipment, but consider only the basic tools that may be found in the average amateur filmer's closet: a few photofloods, several photospots and perhaps some medium beams. Add to these a couple of light stands, 3 or 4 clamps, plenty of cord and a few spare fuses, and you have the essential tools. To these you may add as many accesories as your budget will allow.

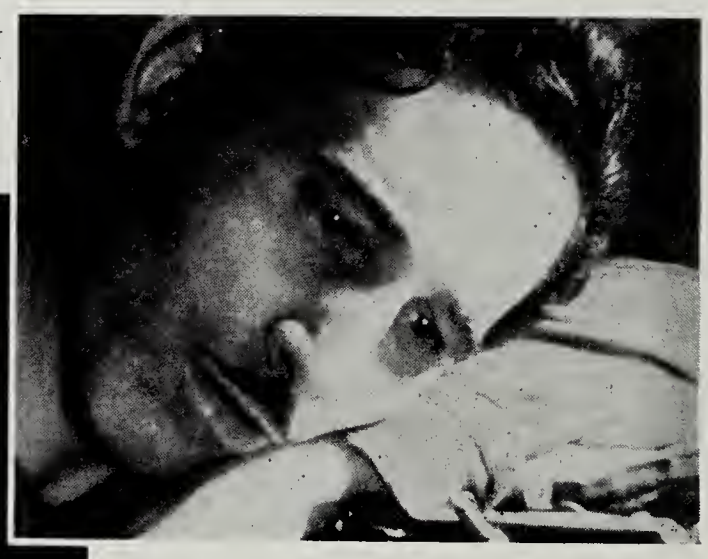
Before you can begin to light a movie, you must know the mood of the story you are about to film. The type of lighting required for a comedy, for instance, would be entirely different than that for, let us say, a psychological tragedy. The mood of your story will dictate the key of your lighting. Since my wife and I are intensely interested in low key, dramatic illumination, and since we have used it with some degree of success, it is that type of mood lighting which I will discuss.

Let us assume now that we are about to film a scene in a tragedy. The set is dressed. The actors are in their places. Every last detail in costume and make-up has been checked. The script calls for a two-shot in which one character speaks a line that has such a terrifying effect upon the other that he shrinks away as though suddenly confronted with a monster.

Suppose that you throw enough general illumination on the set to enable you to film the scene at, let us say, F/4, and you shoot it that way. Your results will be very unsatisfactory. Oh, you will have a picture all right. Granted that your focus is razor sharp, your exposure "right on the button," and your actor







FRAME ENLARGEMENTS of three scenes from author's 16mm color film "Elyra," which illustrate painstaking lighting technique—unusual in amateur film productions. Photos at left and right are of author, who played part in "Elyra" together with his wife, Nadine, center.

highly satisfactory; yet the final result will probably evoke nothing but mild interest from your audience. Your scene has plenty of illumination, but lacks creative mood lighting. Your scene has sharp pictures, but no soul.

Now let us re-film this action, only this time with a thoughtful attempt at dramatic illumination. First we must locate the visible sources of light on the set. These consist of two candles on opposite sides of the room—one toward the back, and one up front. Now we will try to simulate the candle light by placing our light units in such a way that the illuminated areas will appear to be receiving their light from the candles themselves. Objects close to the source of light will be brilliantly lit, while those farther away will recede into shadow. It is advisable to have the actors walk through the action while you study the changing light patterns that fall upon them.

At this point we notice that when an actor stands at the rear of the set, facing the camera, he receives strong side light on his right side with resultant bold shadows on his left. As he walks forward he will go out of range of the lighting on his right and step into the area of simulated candle light on his left. Thus, the light pattern on the figure has been completely and logically reversed, giving the scene heightened dramatic interest.

But we are not finished yet. We noticed that when the actor's right side was well illuminated his left side was in deep shadow. Obviously, some fill light is necessary. Further light manipulation reveals that a lamp trained on his left side from a high angle and slightly behind him will not only render the shadow areas more transparent, but also throw some interesting highlights on his hair. This procedure is followed with every section of the set until the desired atmosphere has been created.

Before shooting the scene we have another rehearsal of the action to get the over-all effect of the lighting. Now we notice with satisfaction that the movements of the actors are being constantly dramatized by the lighting. The dusky areas create just the air of mystery desired for this scene. The set assumes the three-dimensional reality that is so important in maintaining dramatic empathy.

Although lighting plays such an important part in creating the proper mood for your story, it must never be made to dominate the action. Its function is to heighten the drama and to enhance the scene both pictorially and emotionally.

When lighting for mood in a motion picture, we need not depend entirely upon illumination from visible light sources. Some very striking effects can



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be achieved with light coming through a window or an open doorway. These invisible sources afford a wonderful opportunity to experiment with colored gelatins. The light coming through the window can be changed from sunlight to moonlight merely by using a different gelatin in front of the lamp.

Often the shadow patterns cast by unseen objects can create an illusion of authenticity difficult to produce in any other way. The atmosphere of a prison cell, for example, can be achieved by projecting the shadow of the barred window upon the bare wall behind the prisoner. This can be done very simply by placing a small cardboard cut-out of the windows in front of the light, then directing the light to be desired area in your composition.

Much has been written about the importance of the closeup in the motion picture. I will not add to that except to say that it presents a most challenging opportunity to the cinematographer who wishes to experiment with lighting. As a rule, the lighting set-ups used to film the long shot will not be suitable for the closeup. Closeups require lighting set-ups of their own. Here again we have found the colored gelatin an invaluable accessory in heightening mood and characterization. Not only can we give a face more dramatic power by controlling the chiaroscuro patterns, but we can also alter the colors at will. Let me illustrate:

At one point during the production of "Usher," the script called for the ghostly figure of a woman to open a door and step into a candle-lit chamber. The light and dark patterns on her face were easy enough to achieve by placing a light almost at her feet, but screened from the camera by a wall. The strong shadows and sharp highlights from this low-angle lighting gave the girl a weird appearance; but not until a blue gelatin was placed in front of the light did we realize the ghostly effect that the scene demanded.

These gelatins that play such an important part in creative lighting for color cinematography are very easy to obtain. Colored cellophane is both inexpensive and effective. It is easily handled when cut and mounted in cardboard frames.

The lighting in a motion picture should be as carefully planned as the shooting script itself. Unfortunately, it is the one department most often neglected by amateur movie-makers. When shooting outdoors, one may occasionally stumble upon an excellent "ready-made" mood shot. But indoors the filmer has to create the effect himself. That requires planning and hard work. Many times you may work for 45 minutes lighting a scene that may require only 5 seconds to shoot.

In lighting a scene, it is well to keep in mind that the color film most of us use does not have much latitude. Many amateurs have had the experience of shooting a scene that looked just right to the naked eye, only to discover later that in the processed film the shadows were too dark or the light areas burned out. Our method is first to light a scene so that it looks right to the naked eye. We then check it very carefully through a Spectra Color Contrast Viewing Glass. This handy little tool looks very much like a neutral density filter with a short handle. When viewing a scene through this glass you will see it approximately as the film will record it. In other words, if the dark side of a green chair looks black when viewed through the spectra, it will undoubtedly come out black on your film. If you wish the green to register on the film, the light on the dark side of the chair must be increased until the green becomes visible through the spectra. If you don't have a Spectra, you can attain much the same result by studying your set through tightly squinted eyes.

Lighting for the motion picture is often a laborious, and always a painstaking endeavor. It is also an exacting and expressive art. The motion picture is more than a logical succession of photographed pictures in motion; it is an eloquent form of theater. Therefore, illumination for this medium is not only a functional device for defining pictures for the eye of the camera, but an indispensable creative element for evoking mood and heightening emotion in this essentially dramatic art.

ANSCO'S NEW COLOR FILM

(Continued from Page 483)

we did not make any attempt to use CC filters. In most instances we were forced to crowd the film to its limits, and to cope with a filter factor would not have been feasible because we would have defeated our objective of gaining all the speed the film afforded. As we pointed out before, the color held up exceptionally well.

Of course, shooting original is one thing but the big question of what would happen in printing was still unanswered. The original footage was exceptional, so—with some misgivings, we sent it off for printing. Suffice it to say the first answer print was more than satisfactory.

In this day of tight budgets and the inevitable swing to color, it is our feeling that Ansco has made a real contribution with its new high-speed color film. At this stage the versatility and latitude of the new Anscochrome will more than negate any shortcomings.

Here is a color film that will permit 16mm color production with a minimum of lighting. For example, our experience has show that a few 500 watt clip-ons placed judiciously in a factory scene will, in addition to the existing light, provide adequate illumination for Anscochrome.

STARTING THE NEW ASSIGNMENT

(Continued from Page 473)

shot pretty well lined up on paper by the time we started back to Kanab in mid-afternoon.

When we arrived back at the Lodge, my assistant, Paul Cable, had arrived along with the camera and grip equipment and the camera car. The rest of the company and crew was scheduled to leave Los Angeles by plane the following morning, to be on hand at 9 A.M. ready to start the picture.

In the meantime, other equipment was arriving from Hollywood, including a horse truck with six horses, a stage coach, and another truck loaded with props, reflectors, wardrobe and all the personal baggage which did not accompany those who traveled by plane. Among the rolling stock, there was also a completely equipped dark room on wheels.

The following morning at nine we had all our equipment on hand; the camera was loaded and ready to work, and we looked forward to our three-day schedule of shooting exteriors with no anxiety whatever until one delay after another prevented us from getting the first take on film until after lunch. This meant that our three-day schedule was now reduced to two-and-a-half days —and that we would have to cut corners and make up for lost time.

Our work at Kanab began right on Page One of the script. Scene 1 was described as follows:

> "*Exterior, Countryside. Day.* Med. shot, horses' legs. The camera sees only the legs of five horses that stand on a hill that overlooks the countryside. The camera tilts back abruptly and we see the five men that sit astride the animals. They appear to be watching something o. s. Lorenzo Garcia sits on the center horse. Lorenzo suddenly wheels his horse about, his men following suit. They gallop down hill, the camera panning with them. Camera then pans the countryside, showing a road, and bringing into view a fast-moving stagecoach."

The site for this shot was one of the more difficult to locate because of the varied action and the unusual scope of camera coverage called for in a single, continuous take. The camera began by

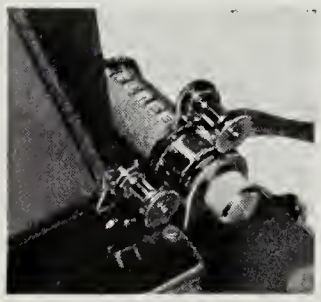


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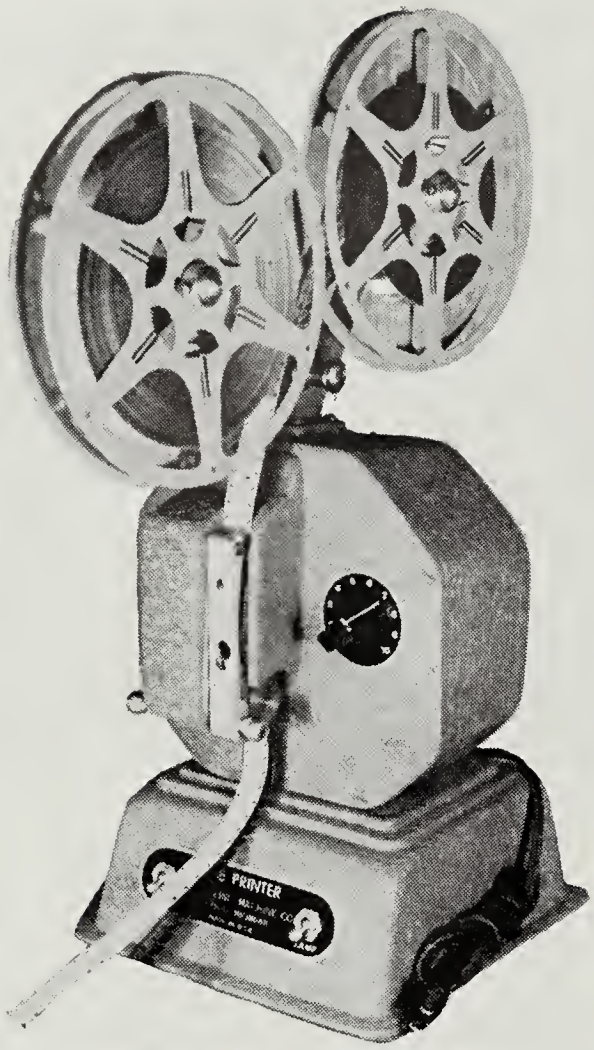
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focusing on just the legs of the group of horses, then tilted up to show the riders astride the horses, then followed the riders as they galloped away down hill. The reason for such a lengthy continuous shot is that it was used both to introduce the story theme and to provide a backdrop for the main title, which was optically superimposed over the latter part of the scene — a technique growing in popularity among Hollywood film producers.

Because the story involved the holdup of a gold-laden stagecoach, a high percentage of the story's exteriors centered around this activity and were filmed in the Kanab region. As with the scene No. 1 described above, each scene and setup in the script was carefully detailed in advance with respect to photography during our first and second days' visit to the location area. By the time we were ready to bring our camera into play, I had developed a mental picture of the action and photographic requirements of each scene as it related to the story as a whole. This is very important to the cameraman who desires something more in his cinematography than mere, mechanical photographic recording, and the only way he can achieve it is to have an active part in the pre-production planning as I did with this picture. The two days that I spent scouting locations with director Bill Claxton led directly to a better photographic job and to getting scenes "in the can" within the scheduled time.

The studio phase of the production began on the following Monday. One major set had been erected. It was called a "relay station," a structure common in remote regions of the West during stagecoach days, where the coaches stopped to afford relief to passengers and where fresh horses were acquired for the ensuing phase of the coach's journey. Adjoining the "relay station" were several smaller buildings and backdropping the scene was a painted backing representing a mountain vista. We worked hard from Monday to Friday to wind up our shooting here, then on the following Monday we traveled to the Gene Autrey ranch for more location exteriors. The sun failed to come out all day; because budget productions never wait for sunshine, we readily adjusted to the situation and photographed the remaining scenes of the picture in the diffused but adequate light that prevailed, finally winding up the last take at 5 P.M.

Because so much of our shooting was on location, I had no opportunity to view the daily rushes, but I was provided with light test strips which, after you are in this business long enough, will give an adequate check on what results you are getting.

And the photographic results we achieved with the new Plus-X negative I think are terrific. Because of the film's extremely fine grain, it is ideally suited to production in CinemaScope, which involves super-enlargement of the image on the screen. It is likely that this new film will lead to more and more black-and-white productions being filmed in CinemaScope.

An interesting sidelight to this budget production is the fact that no sound was recorded during the shooting of location scenes in Kanab. Where dialogue was important, the necessary action was shot in closeup on the sound stage back at the studio, and the scenes intercut where required. Otherwise, all necessary sound effects compatible with the action staged on location was post-recorded and dubbed-in in the final phases of completing the production.

"STAGECOACH TO FURY"

(In black-and-white and CinemaScope)
Produced by Regal Films, Inc.

Producer	Earle Lyon
Director	William Claxton
Prod. Mgr.	Ian MacDonald
Asst. Director	Mack Wright
Art Director	Ernest Fegte
Dir. of Photography	Walter Strenge, ASC
Operator	Keith Smith
Assistant Cameraman	Paul Cable
Assistant Cameraman	Jim Williamson
Assistant Cameraman	Harry Young
Still Photographer	Cliff Kling
Grip	Fred Williams
Gaffer	Bob Jones
Property Master	Jock Liebgold

The Players

Forrest Tucker
Mari Blanchard
Paul Fix
Wallace Ford

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LOCATION CAMERA CARRIERS

(Continued from Page 477)

positions through the facilities of the boom. However, there was still room for improvement.

Development of the Jeep and the fork-lift truck led indirectly to building the first practical location camera transport now popularly known as the "Blue Goose." Grip Howard Cooley, who worked mostly with Technicolor camera crews years ago, figured there must be an easier way to handle the cumbersome Technicolor camera on location than by the methods then in use. He decided to do something about it and set to work designing a carrier that would be powerful enough to move over the roughest of location terrain. It also had to provide a substantial camera support that could be elevated easily to afford a reasonable range of camera positions. The first "Blue Goose" was completed and patented in 1950. Basic structure was a Dodge four-wheel-drive truck with a hydraulic lift mounted on the front with a platform for the camera. Since then, five such transports have been built by Cooley. The latest model provides all the necessary equipment for limited production on location—camera and accessories, sound recording equipment, and grip equipment. The units are available to the various Hollywood studios on rental. The most experienced operators are now doing limited running shots and semi-boom shots with the "Blue Goose."

Another grip, whose name is forgotten, is responsible for dubbing the vehicle "Blue Goose." It was a habit of his to sing on location and one song had to do with a bluee goose. Observing Cooley's vehicle waddling up over a hill one day, he mentioned that it moved "just like a blue goose," and the name has stuck ever since.

As production equipment is developed and its value proven in use, it has been the practice of the major studios in Hollywood to copy the idea and build their own—usually with the consent of the "copyright owners." Recently, Warner Brothers' studio built a carrier similar to the "Blue Goose," except that it provides more storage space for essential location production equipment. The vehicle itself is four-wheel drive and there is the usual hydraulic lift with camera platform mounted on the front end. (See center photo, bottom page 476.)

One of the things that carriers such as these did for the production companies was to eliminate the need for erecting camera parallels on location. Economies have been effected in that it is now rarely necessary to ship the lumber for parallels to location and

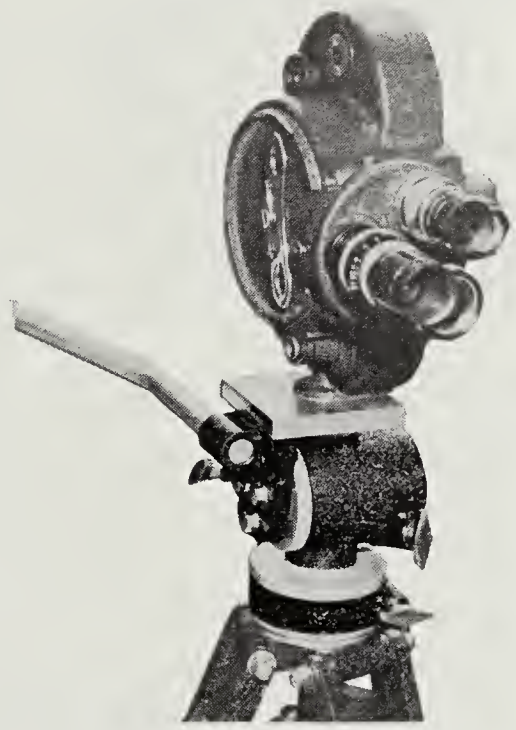
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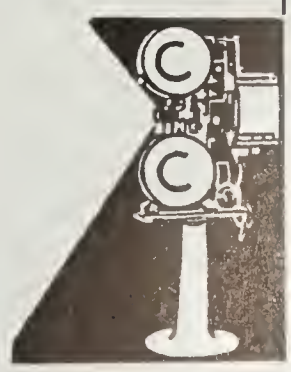
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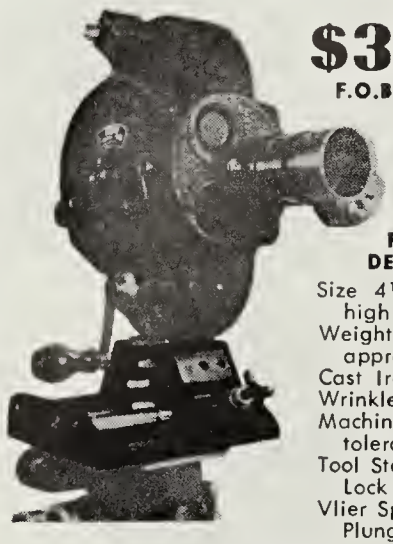
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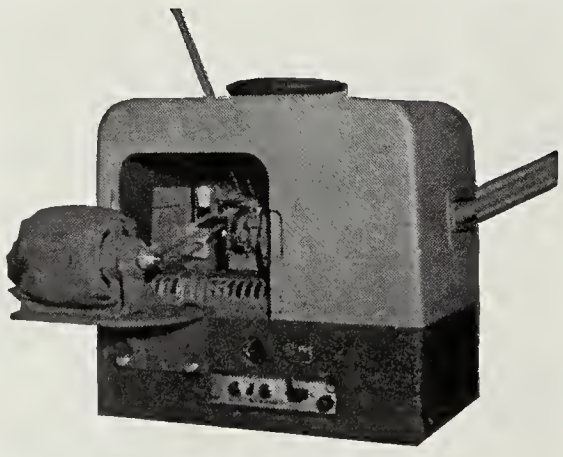
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send a staff of carpenters and grips to assemble them. The hydraulic lift has replaced all this, except where the camera must be set up at very great heights.

The latest studio to build its own camera and location truck is Universal-International. Designed by Grip Department head Virgil Summers, U-I's transport is reportedly an improvement on the "Blue Goose" and the Warner Brothers' carrier in that it employs hydraulic stabilizers for the hydraulic lift supporting the camera platform, and provides specially designed compartments for essential grip equipment, magnetic film recording apparatus, also a hydraulic tail-gate that simplifies the task of loading into the vehicle the small gas-powered generator which is used to provide power for fill lights.

Extending the range of usefulness of the carrier is the innovation of having the hydraulic mast in a flexible mount so that it may be tilted forward or backward to provide a level platform for the camera when the truck comes to rest on an incline, as in rocky, mountainous areas.

Industrial film units have been quick to adopt the mobile production transport idea developed by the major studios. Film production in the aviation industry today demands the same equipment and facilities that the Hollywood studios have found important to speedy and economical film making. This led the Motion Picture Division of Douglas Aircraft Company, at Santa Monica, California, to design a mobile carrier adequate for its needs when shooting in the field. All the equipment necessary for full-scale film production by Douglas is transported to locations in a specially designed motor-van that provides ready accessibility to any item of production equipment, be it lamp, parallel or dolly. Through skillful design of the interior, accommodations have been provided for a tremendous array of production equipment ranging from a camera dolly to some two-dozen incandescent set-lighting lamps of assorted sizes. Unlike the units described earlier, the Douglas vehicle does not provide a hydraulic lift and camera platform. Instead, and because most of the shots made above tripod height are at one level, a sturdy deck for the cameras is mounted on roof of the truck, with a collapsible guard rail of iron running around it.

In recent years the giant camera boom has come into use in shooting on rugged locations. Like the camera cars with hydraulic lifts, units such as the popular Chapman booms will travel anywhere an Army Jeep or four-wheel-drive truck will go. They offer the added advantage of the long and flexible boom enabling the camera to be used at ground level or as high as thirty feet.

Twenty-five years ago, when a film company traveled to a distant outdoor location, lack of modern equipment such as is available today restricted a cameraman in the photographic treatment he could give a picture. Today, anything is possible on location that can be done with a camera on the sound stage—thanks to the versatile location camera carriers.

3-PERFORATION FILM FRAME PROPOSED

(Continued from Page 487)

0.500", which, with an anamorphic expansion factor of 2, would result in a 2.5/ a.r. picture.)

Retention of the 24-frame/sec. rate is favored for 3-hole film prints. The advantages of this standard rate are fivefold. (1) Studio camera apparatus need not be altered. (2) Old pictures may be reshown in theatres by merely reprinting the 4-hole picture negatives at 1.65/1 a.r. on 3-hole master positives and re-recording the 90 ft./min. sound masters at 67½ ft./min. (3) A 1⅓ increase in running time and saving of film and raw-stock costs. (4) Larger useful film life, less wear on hard-working projector intermittents, and less film noise in the projection room. (5) Film can be shown on TV by the present-day 2-3-2 method of pulldown timing.

The single disadvantage of 24 frame/sec. 3-hole film is the effect of the lower linear rate on sound reproduction. Unless the scanning beam of recording apparatus be narrowed to ¾ of its present width, the highest frequency recordable in optical sound will be reduced from 12,000 cycles to 9,000 cycles. This difficulty is easily overcome; and as far as projector soundheads are concerned, it will be necessary only to restore the old 1-mil scanning-beam standard (specifically 0.9375 mil instead of the present 1.25 mil). The lower film speed will compensate for the increase in ground noise due to emulsion grains.

A slight attenuation in the high-frequency range, however, is not serious. In fact, attenuation of the 1,000—10,000 cycle range by the speaker system is always appreciable, and in most cases desirable even when the optical-track soundheads reproduce frequencies as high as 10,000-12,000 cycles. Too high a "top-cut" increases ground noise.

Even 16mm sound film running at 0.4 the speed of standard 35mm film is quite capable of providing satisfac-

tory sound up to about 8,000 cycles at ordinary levels of volume.

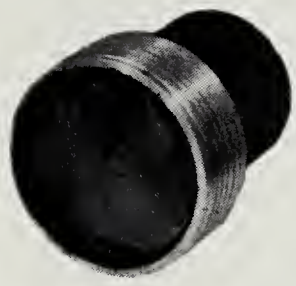
As for the more rapid frame rates proposed for 3-hole film, their advantages lie chiefly in the direction of flickerless pictures and less heating of the emulsion by the arc-lamp beam. In fact, 48 frames-per-second prints made from 24 frame/sec. negatives might be very serviceable in drive-in theatres to prevent blistering of the emulsion.

The changes needed in 35mm projection equipment for running 3-hole film are not extensive. Old-style projectors can "get by" with nothing more than a substitution of 12-tooth sprockets for the regular 16-tooth sprockets (with corresponding readjustment of the pad rollers and gate-door intermittent-sprocket shoe); but this simple method should not be considered as a permanent expedient. Film-wrap around 12-tooth sprockets is not entirely satisfactory.

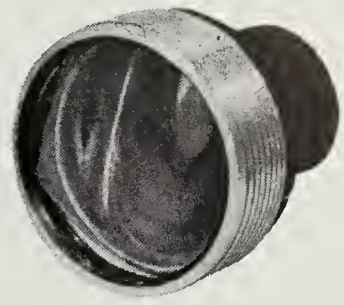
The ideal conversion of a projector to 3-hole film involves the substitution of a suitably geared intermittent movement employing an 18-tooth sprocket (six 3-hole frames per revolution) and reduction of a motor-soundhead drive gearing to ¾ of the present standard RPM to allow use of present sprockets in mechanism and soundhead. The problem is a simple one from the point of view of the mechanical engineer. **END**

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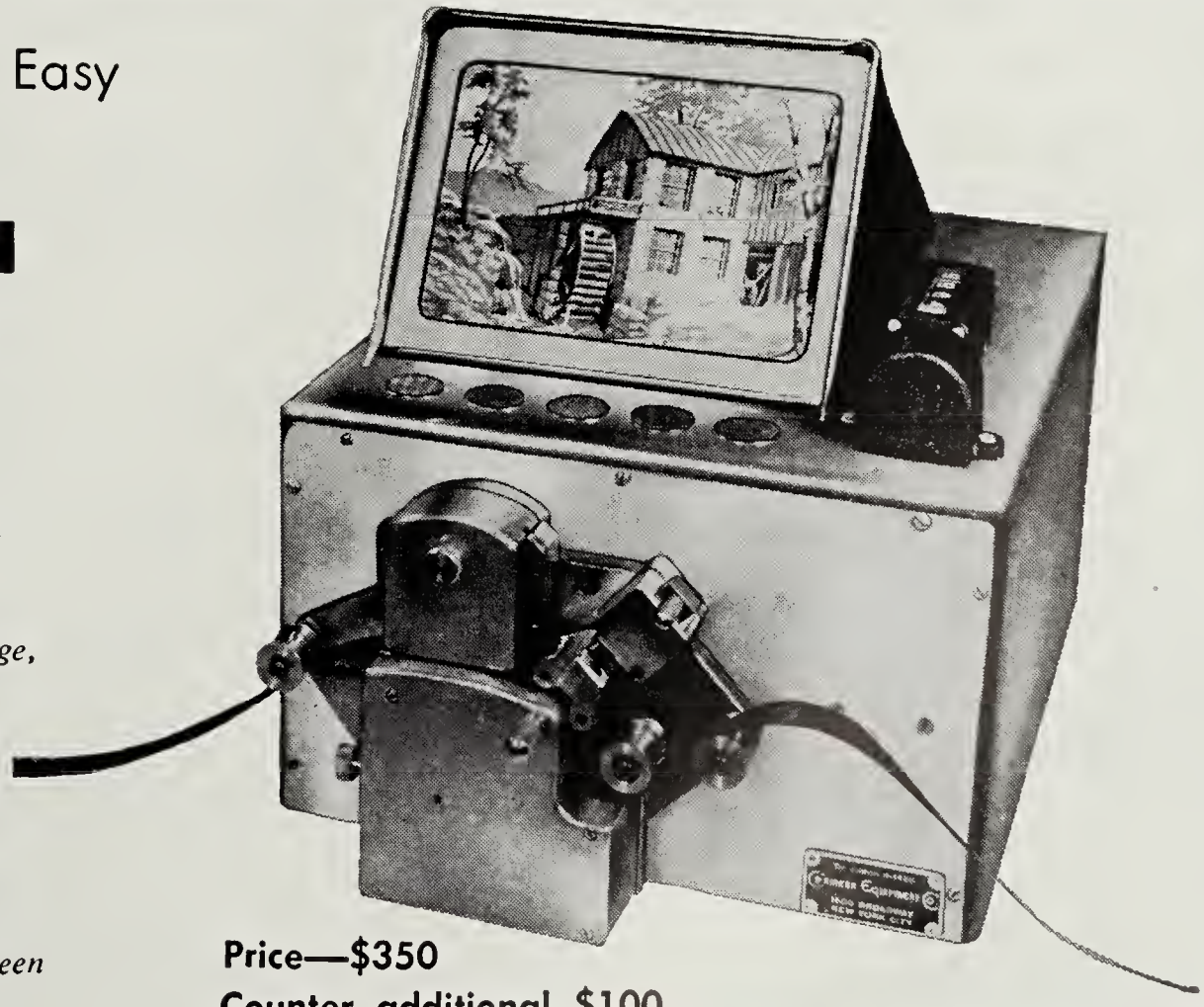
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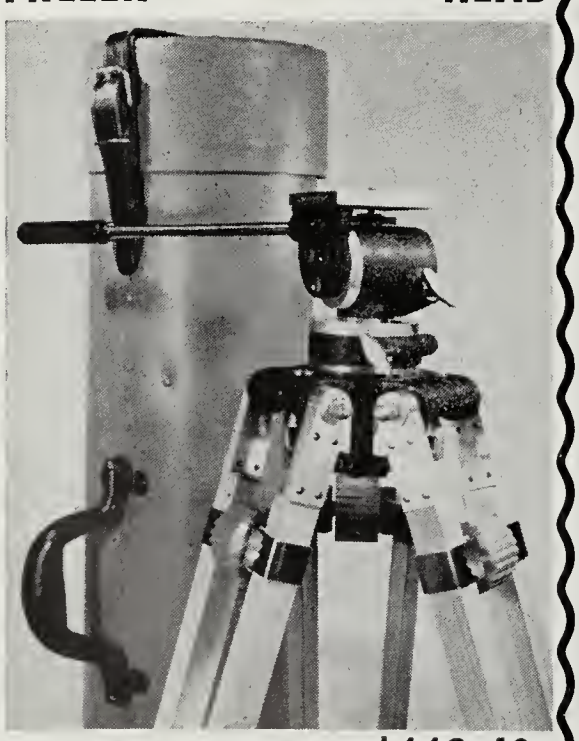
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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 469)

• JOHN MACBURNIE, ASC, "The Jane Wyman Show," TV. Don Weis, director: "Soldier of Fortune," TV, Revue Prods., Richard Irving, director.

• REGGIE LANNING, "G.E. Theatre," TV, Revue Prods. James Nilsen, director: "Alfred Hitchcock Presents." TV. James Nilsen, director.

• WILLIAM SICKNER, ASC, "Studio 57," TV. John Brahm, director.

• HERB KIRKPATRICK, "GE Theatre," TV. Hershel Daugherty, director.

• JOHN RUSSELL, ASC, Gulf Oil Commercial, TV. Bud Springsteen, director.

HAL ROACH STUDIOS

• JACK MACKENZIE, ASC, "Code 3," TV. Various directors.

• EDWARD FITZGERALD, ASC. "The Charlie Farrell Show," TV, with Charles Farrell. Ralph Murphy, director.

• PAUL IVANO, "Stories of John Nesbitt," TV, with John Nesbitt. Various directors.

• LOTHROP WORTH, ASC, "The Gale Storm Show." TV, with Gale Storm and ZaSu Pitts. Various directors.

RKO

• JOSEPH BIROC, ASC, "Run of the Arrow," (Eastman Color; Wide screen) (shooting at St. George, Utah) with Rod Steiger and Sarita Montiel. Samuel Fuller, producer-director.

• WILLIAM SNYDER, ASC, "Bundle of Joy," (Eastman color; wide-screen) with Eddie Fisher and Debbie Reynolds. Norman Taurog, director.

• WILLIAM SKALL, ASC, "The Day They Gave Babies Away," (Eastman Color; Wide-screen) with Glynis Johns and Cameron Mitchell. Allen Reisner, director.

• ROBERT PLANCK, ASC, "The Young Stranger," with James MacArthur and Kim Hunter. John Frankenheimer, director.

• LUCIEN BALLARD, ASC, "I Married a Woman," with George Gobel and Diana Dors. Hal Kanter, director.

• MOE HARTZBAND, "Brave Tomorrow," Galahad Prod., shooting in N.Y., with John Beal and Augusta Dabney. John Newland, director.

RKO PATHE

• GEORGE DISKANT, ASC, "Hey Jeannie," Jeannie Prods., with Jeannie Carson and Allen Jenkins. Les Goodwin, director; Zane Grey Theatre, Four Star Prods. TV. Various directors.

20TH CENTURY FOX

• LEO TOVER, ASC, "Between Heaven and Hell," (Technicolor; CinemaScope) with Robert Wagner and Terry Moore. Richard Fleischer, director.

• JOE MACDONALD, ASC, "Teenage Rebel," (DeLuxe Color-CinemaScope) with Ginger Rogers and Michael Rennie. Edmund Goulding, director.

• JACK HILDYARD, "Anastasia," (Deluxe color; CinemaScope) (shooting in London) with Ingrid Bergman and Yul Brynner. Anatole Litvak, director.

UNIVERSAL - INTERNATIONAL

• CLIFFORD STINE, ASC, "The Incredible Shrinking Man," with Grant Williams and Randy Stuart. Jack Arnold, director.

• RUSSEL METTY, ASC, "Mister Cory," with Tony Curtis and Martha Hyer. Blake Edwards, director.

• WILLIAM DANIELS, ASC, "Interlude," (CinemaScope - Technicolor) (shooting in Munich) with John Allyson and Rossano Brazzi. Douglas Kirk, director.

• MAURY GERTSMAN, ASC, DuPont commercial, TV. Wil Cowan, director; Lava Soap Commercial, TV. Jack Daniels, director. "The World and Little Willie," (Technicolor) with Maureen O'Hara and John Forsythe. Jerry Hopper, director.

• CARL GUTHRIE, ASC, "Quantez," Technicolor and CinemaScope, with Fred MacMurray and Dorothy Malone. Harry Keller, director.

• IRVING GLASSBERG, ASC, "Joe Butterfly," CinemaScope and Technicolor, with Audie Murphy and George Nader. Jesse Hibbs, director.

• RUSSELL METTY, ASC, "The Eyes of Father Tomasino," CinemaScope, with Tony Curtis, Marisa Pavan and Gilbert Roland. Joseph Pevney, director.

• GEORGE ROBINSON, ASC, "Crazy Love," with Sal Mineo and Luanna Patten. Richard Bartlett, director.

• ELLIS CARTER, ASC, "The Deadly Mantis," with Craig Stevens and Alix Talton. Nathan Juran, director.

• CHARLES WELBORN, Prell commercial, TV; Ford commercial; RCA commercial, TV. Jack Daniels, director.

• ARTHUR FEINDEL, ASC, De-Soto TV commercial. Will Cowan, director.

• WALTER STRENGE, ASC, Marlboro TV commercial. Jack Daniels, director.

WARNER BROS.

• ROBERT BURKS, ASC, "The Wrong Man," (Alfred Hitchcock Prod., shooting in New York City) with Henry Fonda and Vera Miles. Alfred Hitchcock, director.

• FLOYD CROSBY, ASC, "The Old Man and the Sea," (WarnerColor; wide-screen) (shooting in Cuba) with Spencer Tracy. Fred Zimmermann, director.

• JOHN SEITZ, ASC, "Buffalo Grass," (WarnerColor) with Alan Ladd and Virginia Mayo. Gordon Douglas, director.

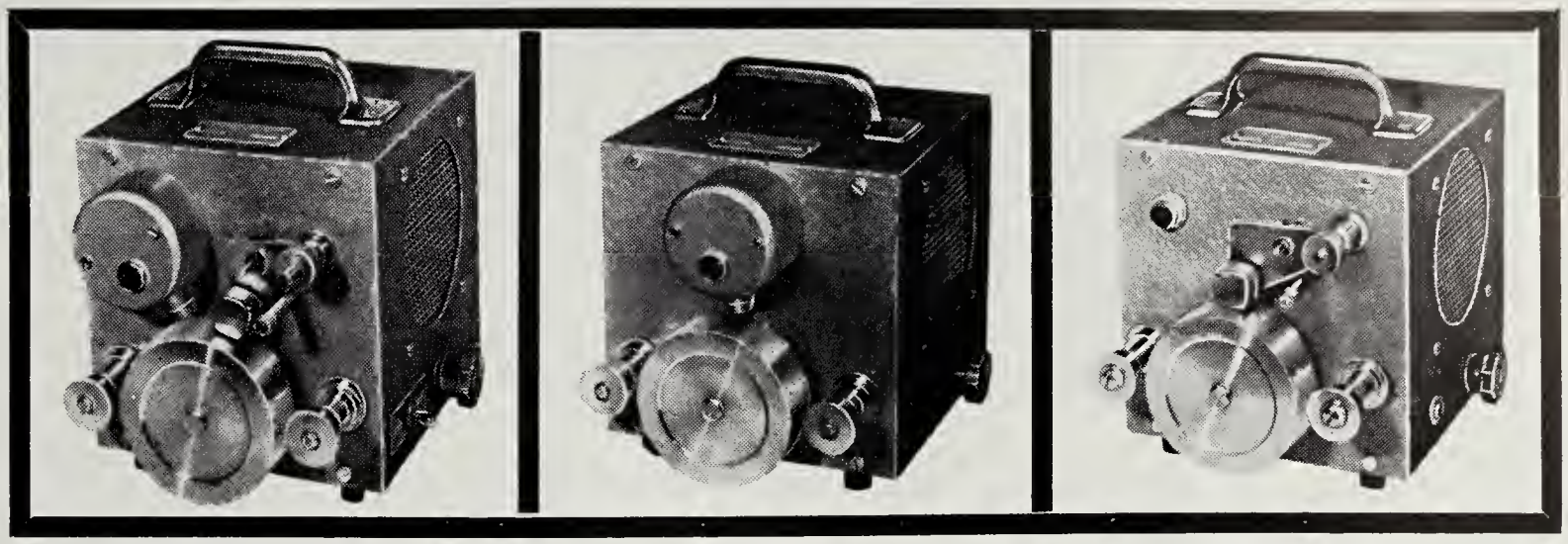
• HAROLD STINE, ASC, "Shock Wave," Warner Bros. Presents, TV, with Scott Brady. James Kein, director; "Cheyenne," Warner Bros. Presents, TV, with Clint Walker. Walter Doniger, director.

• HAROLD ROSSON, ASC, "Conflict," Warner Bros. Presents, TV, with Harry Seymour. Frederick De Cordova, director.

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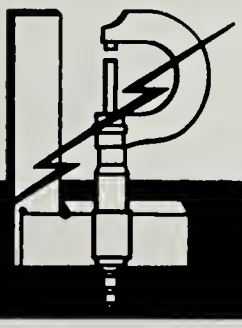


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DIRECTING THE CAST

(Continued from Page 489)

There are sometimes occasions when you can profitably follow the example of Pudovkin, who used to "cheat" his effects with his non-professional casts. In *Storm Over Asia* he wanted a crowd to gasp in amazement at a rare fur. So he shot them watching a conjuror and got just the result he needed. He describes several examples of this practice in his famous books, "Film Acting" and "Film Technique."

It's not often, though, that we can let off fireworks under the nose of a player who we want to look startled. Usually it's a matter of demonstration, coaxing and encouragement. I have seen an amateur director of sixteen get first-class performances out of a cast twice his age by engendering their respect and wholehearted co-operation.

Go on location with a bunch of raw actors, a half-prepared synopsis and an uncertain mind and you're doomed. But confront the same cast with a firm shooting script and a determined approach, and you'll get firm and determined performances.

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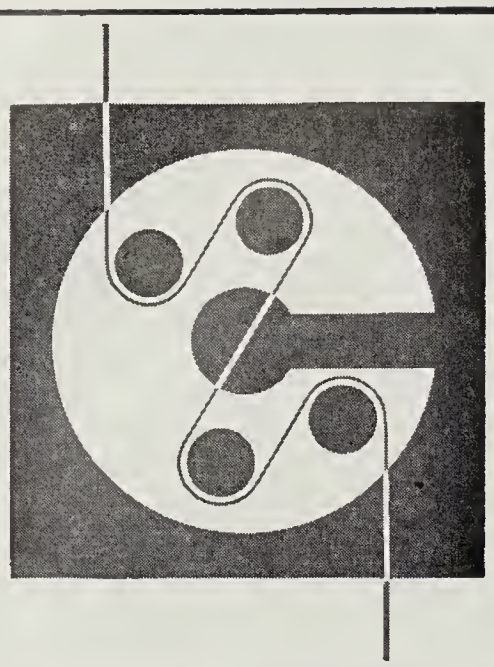
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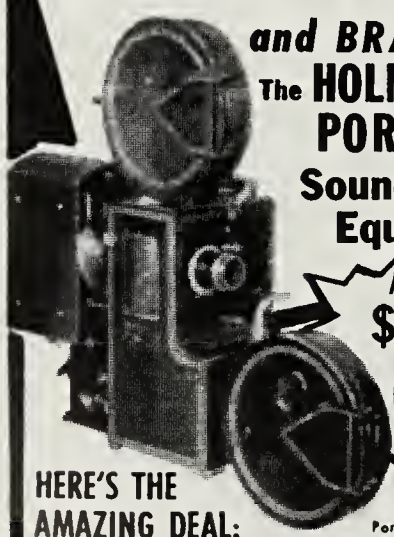
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ROVING TV CAMERAMAN

(Continued from Page 484)

other equipment and gear, was loaded on a large sled; this was drawn by a tractor-like vehicle known as a Snow-Cat, which the television station uses to transport supplies to its transmitter personnel atop Mt. Washington. With my portable 35mm camera loaded and ready to shoot, I sat at the rear of the sled and made a film record of our ascent.

The sky was clear and the bright sun cast interesting shadow patterns on the sparkling snow as we traveled up toward timberline. At each turn in the road, we could look down upon the picture post-card scene where nestled the Chalet in which we had spent the previous night. I kept my camera busy during most of the journey through timberline and also as we emerged through a clearing.

As we approached the half-way mark —about five miles from point of embarkation—we saw heavy grey clouds gathering and floating toward us. In a matter of moments we were enveloped in the clouds and I had to discontinue shooting. Visibility had been reduced to ten feet. Captain Hancock, who had joined us at the Air Force headquarters below, said the sudden appearance of the clouds indicated a blizzard was in the making and probably would be upon us before we reached the summit.

Occasionally the clouds would thin out and the sun would come through momentarily to reveal the barren terrain around us, with its odd-shaped boulders coated with a thin layer of crystal clear ice.

The Snow-Cat now traveled at a sharp angle as it moved along at snail's pace, as though groping for the unseen road. The continued swaying reminded me of an ocean liner being buffeted by a typhoon. The crunching sound of the tractor treads bitting into the icy crust concealing the road was a reassuring sound that ended almost without warning when the Snow-Cat's front end reared up suddenly and the tractor's treads began slipping on the hard packed ice. The heavily loaded sled had jacknifed and become wedged against a boulder, but at an angle that promised it would momentarily go over the mountainside. I jumped off and immediately put my camera into action, shooting furiously—ever-ready to record the catastrophe should another shift of the sled send it on its way.

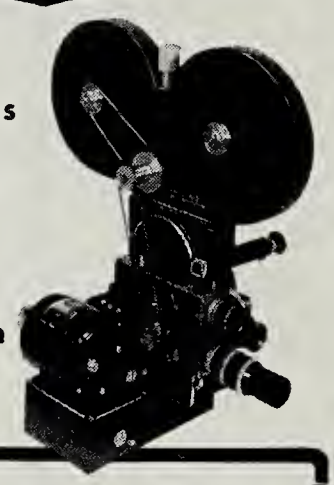
With commendable calm, our driver remained at the Snow-Cat's controls. Using the vehicle's two-way radio, he called the summit personnel for assistance. Another Snow-Cat was soon on the

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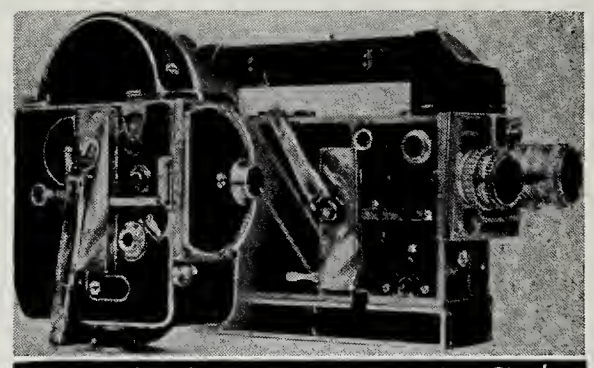
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scene and set about righting our sled so we could get on our way again. All the time, of course, I was making a record of the activity on film.

The ominous clouds were now gathering at an accelerated pace and the wind had increased; each take now had to be shot faster and with less footage, as the sun's momentary appearance became shorter and shorter.

The rescue crew, working feverishly, soon had our sled righted and our Snow-Cat back on the road. We proceeded on toward the summit in the "Cat," leaving the sled behind to be towed by our rescuers.

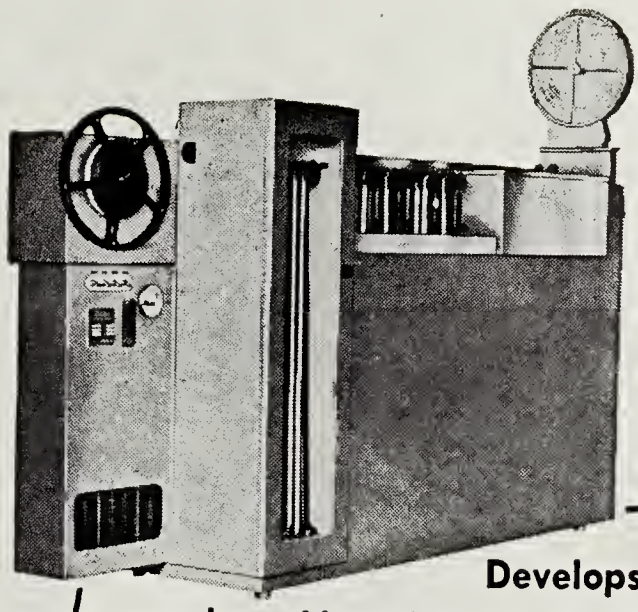
We arrived at the summit of Mt. Washington in the twilight and it seemed that we were in another world, so grotesque did the snow and ice-covered buildings appear. The wind was now blasting away at around fifty miles per hour. As we stepped out of the Snow-Cat, the driving snow struck our faces like so many needles. What little I was able to see reminded me of scenes of Admiral Byrd's expedition to the Polar regions. First to greet us were members of the engineering crew of the TV transmitter, who led us through a tunnel of ice to the building entrance.

By contrast with the frigid exterior, the interior was a virtual palace, well stocked with provisions that would enable the staff to live through the worst of blizzards. The installation had been completed one summer during a sixty-day period when snow storms and winds cease to be a problem.

My camera and sound equipment did not arrived until late that night. All the equipment cases were covered with ice and care had to be taken that no moisture formed on the lenses or otherwise damage the camera and its accessories.

Once we were safely inside the TV station headquarters, the wind velocity increased to 90 miles an hour, making exterior photography out of the question. The following two days, therefore, were spent shooting interiors. As the wind dropped to an endurable velocity of 50 miles per hour, I ventured outside with my hand camera. Earlier I had made shots of a group of men leaving the mess hall and fighting against the wind as they returned to the main building—with my camera set up behind the window of an adjoining building. I decided that closeups of these men braving the storm would enhance the dramatic impact of this sequence, so I donned my Arctic clothing and went out to take a look, with the idea of shooting these scenes when the men returned to the mess hall for their noonday meal.

As I stepped across the threshold and pulled the door shut against the terrific wind, I found that I could not keep my body in an upright position, but had to



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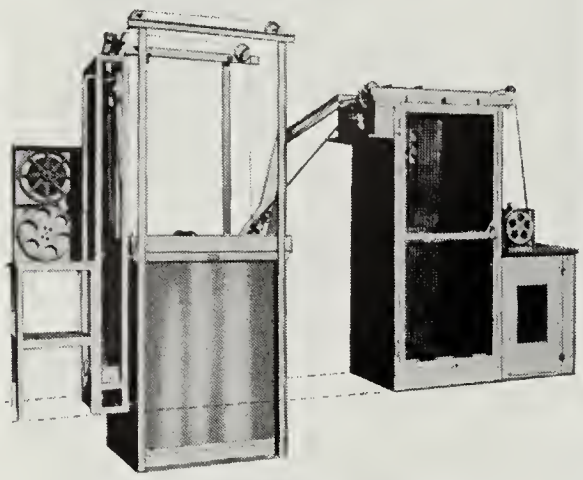
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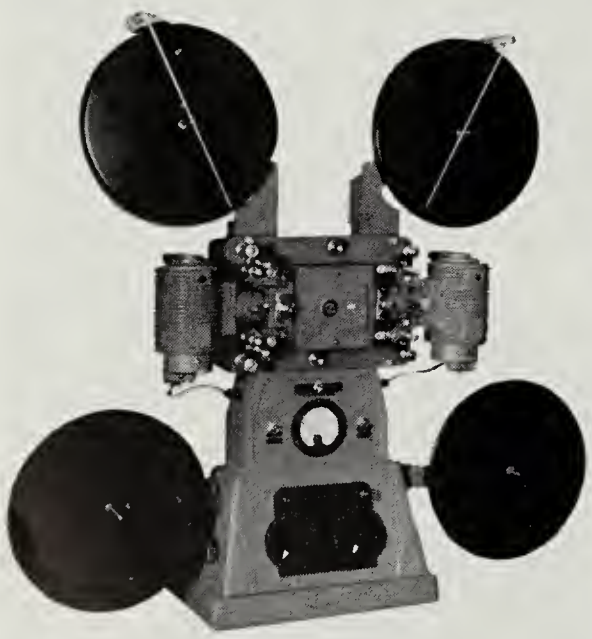
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lean forward against the wind with great effort. It was almost impossible to walk; so getting on my knees and crawling I was able to get about and size up the location for my camera setups. I also had to figure a way to use my camera in the raging storm. The snow seemed to be coming from all directions. I knew that if I took my hand camera out in such weather that within seconds the lenses would become coated with snow.

Here is where the Snow-Cat again came to my rescue. I summoned the driver and the two of us made our way to the "Cat." Inside the cab, we rigged up a length of hose from the heater and directed a stream of warm air on the windshield. In this way I was able to shoot from within the cab; there was the added advantage that I could readily be moved from one planned camera setup to another without the need of crawling through the snow on my hands and knees. This phase of my filming was the easiest of all.

Two days later the storm cleared and we started down the mountain. But bad luck dogged us and half way down a snow avalanche let loose and blocked the road. There was the usual radio call to the TV station on the summit and the other Snow-Cat was soon on the scene to aid in clearing the road.

All in all, it was fun; it was work; and it was dangerous. But it was little different from the exciting experiences that are so often encountered by the field cinematographer. We get used to such things. And I guess that's what makes the job so appealing.

HOW FALLS ARE STAGED

(Continued from Page 480)

to plunge from top of rock.

The next shot of the sequence was staged on the studio back lot, using a "prop" rock designed to match as near as possible the contour and coloring of the real rock in the mountain location. Here the camera—a three-dimension outfit—is set up in reverse position to give more dramatic emphasis to the fall by showing the gunman disappearing over the top of rock. The gunman assumes the same position he held on rock on location, as he started his fall, then on signal actually rolls from top of "prop" rock and on to heavy protective padding on ground only a few feet below.

The concluding shot of the sequence was filmed at the same location as the scenes shown in first three photos, but with the camera far down the mountain and shooting up toward top of cliff. A dummy, doubling for the actor is sent hurtling off top of cliff to base below.



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Skillful intercutting of the various scenes by the film editor made the illusion most realistic. But it was the cinematographer's understanding of camera angles, his use of the right lenses, and his ability to visualize the completed sequence as a whole—in short, giving the film editor the right material to work with—that made this realistic sequence possible.

REFLECTORS

(Continued from Page 474)

As several of the accompanying photos show, studio reflectors are usually mounted in a U-shaped yoke on a metal stand, and are so attached they may be tilted or rotated completely to bring the opposite side of the reflector into use. Many of the studios have coated both sides of their reflectors—one *hard* and the other *medium* or *soft*—thus providing two reflectors in one and reducing the number reflectors that must be transported to locations.

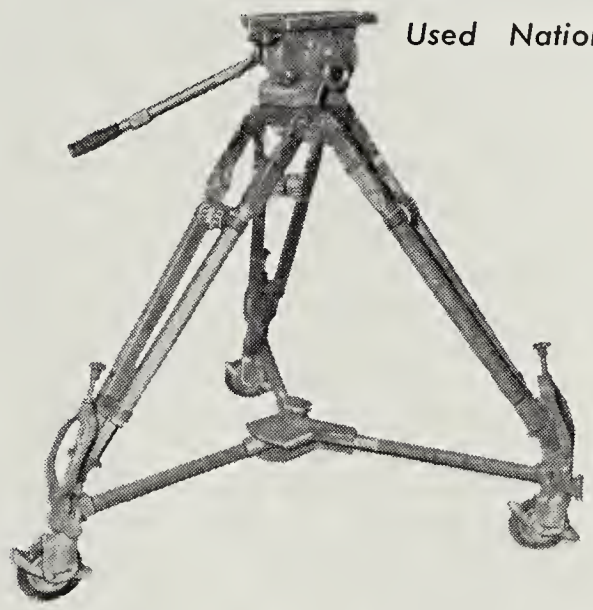
For obvious reasons reflectors are invariably set up in back or to one side of the camera to throw light into the scene from the direction most advantageous for photography. They are used at the extreme side of the camera in medium shots and closeups whenever it becomes necessary to lighten up the shadow side of faces. The fill light thus supplied never equals in intensity the sunlight falling on the opposite side of player. This would create flat, unnatural lighting.

Besides the standard 4′ x 4′ reflector, there are smaller ones for special uses. These are generally held in the hand by a grip or gaffer. An example is shown in the photo at top of page 474. Here an assistant holds a small reflector that throws light on actor Glenn Ford while the cameraman on boom above shoots an unusual angle shot of Ford firing a gun for Metro-Goldwyn-Mayer's "The Fastest Gun Alive."

Today, reflectors are used by every professional producer of motion pictures. The photography of industrial, training, and documentary films out-of-doors demands the same professional technique that marks our contemporary theatrical films. Many serious amateur movie makers have long been users of reflectors. They are so easy to make that they are rarely sold by movie equipment supply houses, although some are available through such channels.

Where the reflector is to be a solid panel, and not hinged in the middle to permit folding for storage, then the material to use for the panel is 1/4″ or 3/16″ plywood. If fiber wallboard is used for reflectors of this size, it will

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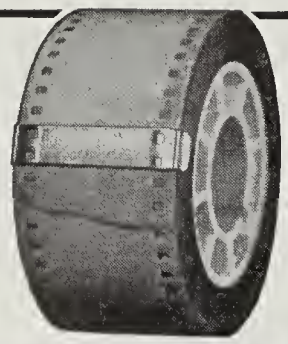
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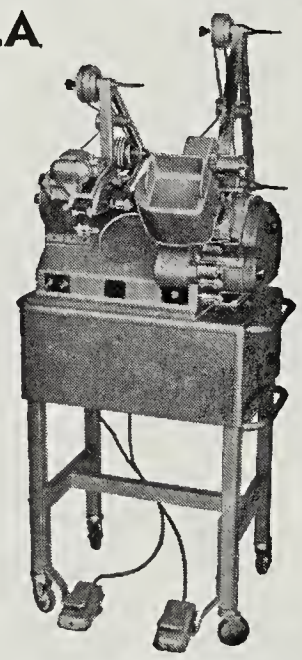
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have a tendency to warp and the uneven surface will not reflect light efficiently. For folding reflectors, the wallboard is satisfactory because the additional framework gives support in the middle.

The 4′ x 4′ reflector should be protected around the edges with battens or strips of moulding nailed to each side. It will be more advantageous to coat both sides of the reflector, thus giving you two reflectors in one—i.e., each having a surface of different reflective quality, as mentioned earlier.

For the average "do-it-yourself" constructor, sheet foil is the easiest material to use for the *hard* surface. For a *soft* surface, use three or four coats of flat white paint. The *soft* reflector will find its greatest use when shooting close-ups, where light from a hard reflector would prove too intense for the players to face and too "hot" for good photographic rendition.

You can have one or more *medium* reflectors by coating the opposite side of a hard or soft reflector with aluminum paint, although aluminum has a tendency to become quite grey with time and thus diminish in effectiveness. The newer chrome paint is brighter and more durable, and while it is "hotter" than aluminum paint, it makes the better reflector surface.

Sometimes the *hard*, foil-covered reflector can be reduced to a *medium* re-

(Continued on Page 506)

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HOLLYWOOD'S NEWEST STORE

Send ad copy accompanied by remittance to cover payment to American Cinematographer, 1782 No. Orange Drive, Hollywood 28, Calif. Closing date for copy is 15th of month preceding issue date.

REFLECTORS

(Continued from Page 504)

flector by covering it with white scrim, which will reduce the amount of light reflection. In such cases, the scrim should be tacked or otherwise securely attached to the reflector frame so that it will not be blown away by the wind.

In a recent discussion of reflectors at the American Society of Cinematographers, one prominent director of photography said:

"To get the best results with reflectors, one must train the eye to recognize when they are needed. It is not the purpose of reflectors to eliminate shadows entirely; neither is it necessary or desirable to reflect light into each and every shadow. Reflectors should be used only to eliminate those shadows in which there is detail that adds to the interest of the scene.

"It is misdirected energy to show unessential or uninteresting details. No attempt should be made to illuminate the shaded side of any subject to the full brilliancy of the opposite side. This would give an unnatural effect that is technically termed 'cross-lighting.' Our eyes have been accustomed to seeing objects with highlights on one side and shadows on the other. It is the relative value of light and shade that gives us the sense of depth—the third dimension. It is this effect that aids us in judging size and distance," he concluded.

In addition to supplying fill light for shadow areas, reflectors are useful also as a means for supplying backlighting in exteriors. For this the *hard*-surfaced reflector should be used. It should be placed at any angle to one side and back of the subject. Be sure that it is far enough to one side so that no rays are reflected directly into the camera.

Backlighting the head of a subject with reflected light will give a beautiful pictorial effect and cause it to stand out in relief.

Although reflectors add light to the scene or subject, it is not always necessary to increase exposure, except, perhaps, for closeups. Where there is any doubt about this, your exposure meter can supply the right answer.

REMOTE CONTROL

(Continued from Page 489)

the plunger type. Used in a vertical assembly, as shown in Fig. B, it will operate such cameras as the 8mm Filmos, 8mm and 16mm Cine-Kodaks, the Victor, and others.

Used in a horizontal assembly, as shown in Fig. C, the device will operate the Keystone, Bolex, and Cine-Special cameras.—*John Forbes.*

SEEING IS BELIEVING!

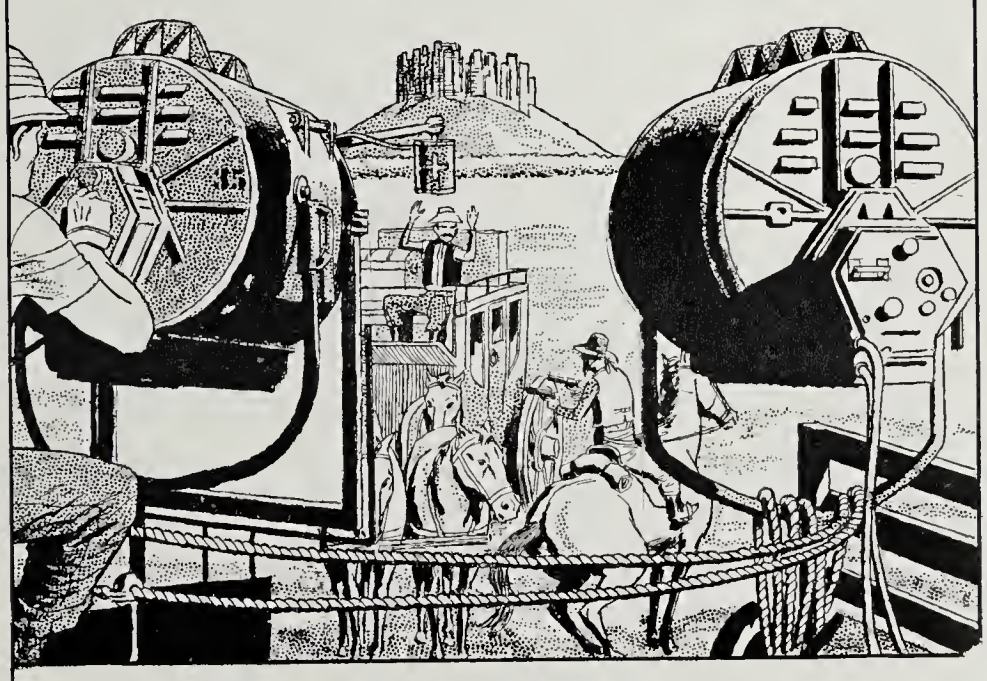
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AMERICAN

SEPTEMBER • 1956

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

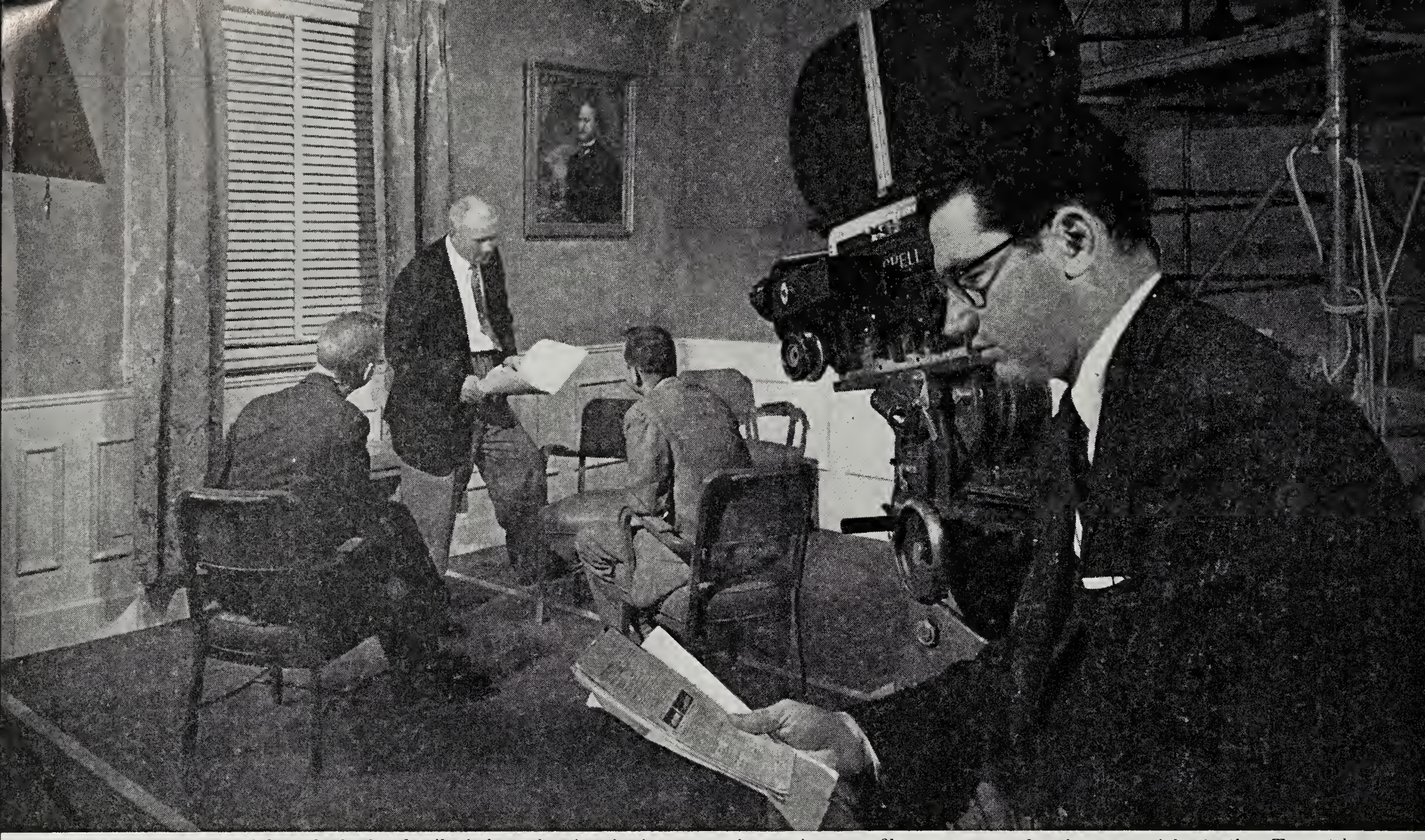


In This Issue . . .

- The Pictorial Significance of Light
- The New Eastman Plus-X Panchromatic Film
- 'Moby Dick' Sets New Color Photography Style

35c

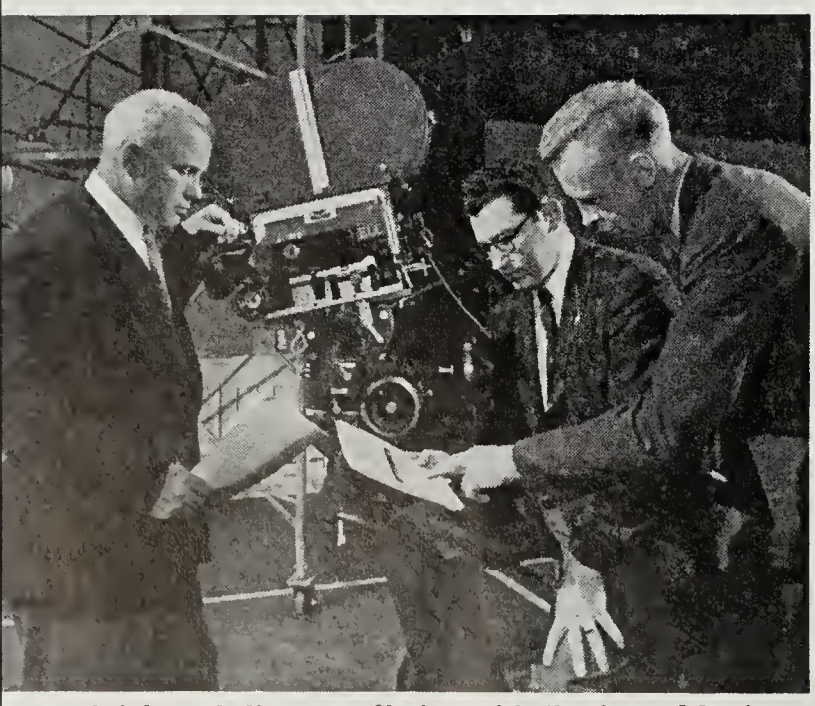
FOREIGN 45c



Cameraman Bert Spielvogel checks details before shooting begins, as Producer Philip Martin gives final instructions to actors. Norwood Studios releases six to ten films per year and each gets special attention. To match their careful planning, they use dependable Du Pont Motion Picture Films.

"I can always count on delicate gradation with dependable Du Pont Film!"

— says Cameraman **BERT SPIELVOGEL,** *Washington, D. C.*



Mr. Spielvogel discusses filming with Producer Martin (left) and Fred Gerretson (right) of Du Pont. He says, "I've shot over 25,000 feet of 'Superior' 2 in three weeks and *know* I can count on good rushes whether the film's for TV or feature use."

"Important middle tones so necessary for faithful reproduction are always retained in Du Pont 'Superior' 2 and Type 914. That's why Du Pont Film is my choice for all black-and-white footage," says Cameraman Bert Spielvogel.

Philip Martin, president of Norwood Studios, adds: "We use Du Pont Films because of their complete dependability. Initial cost of our productions often reaches $20,000 before we shoot a single frame . . . and to be *sure* of the results we'll get, we use Du Pont Motion Picture Film!"

Norwood Studios shoots theatrical and documentary films, such as their recent civilian defense feature "Warning Red." Norwood cameramen shoot under every conceivable lighting and weather condition . . . from wet, overcast Formosa to sunny, tropical Puerto Rico. And, wherever Norwood crews go, their cameras are loaded with Du Pont Motion Picture Film.

FOR MORE INFORMATION, contact your nearest Du Pont Sales Office (listed below) or the Du Pont Company, Photo Products Department, Wilmington 98, Delaware. In Canada: Du Pont Company of Canada Limited, Toronto.

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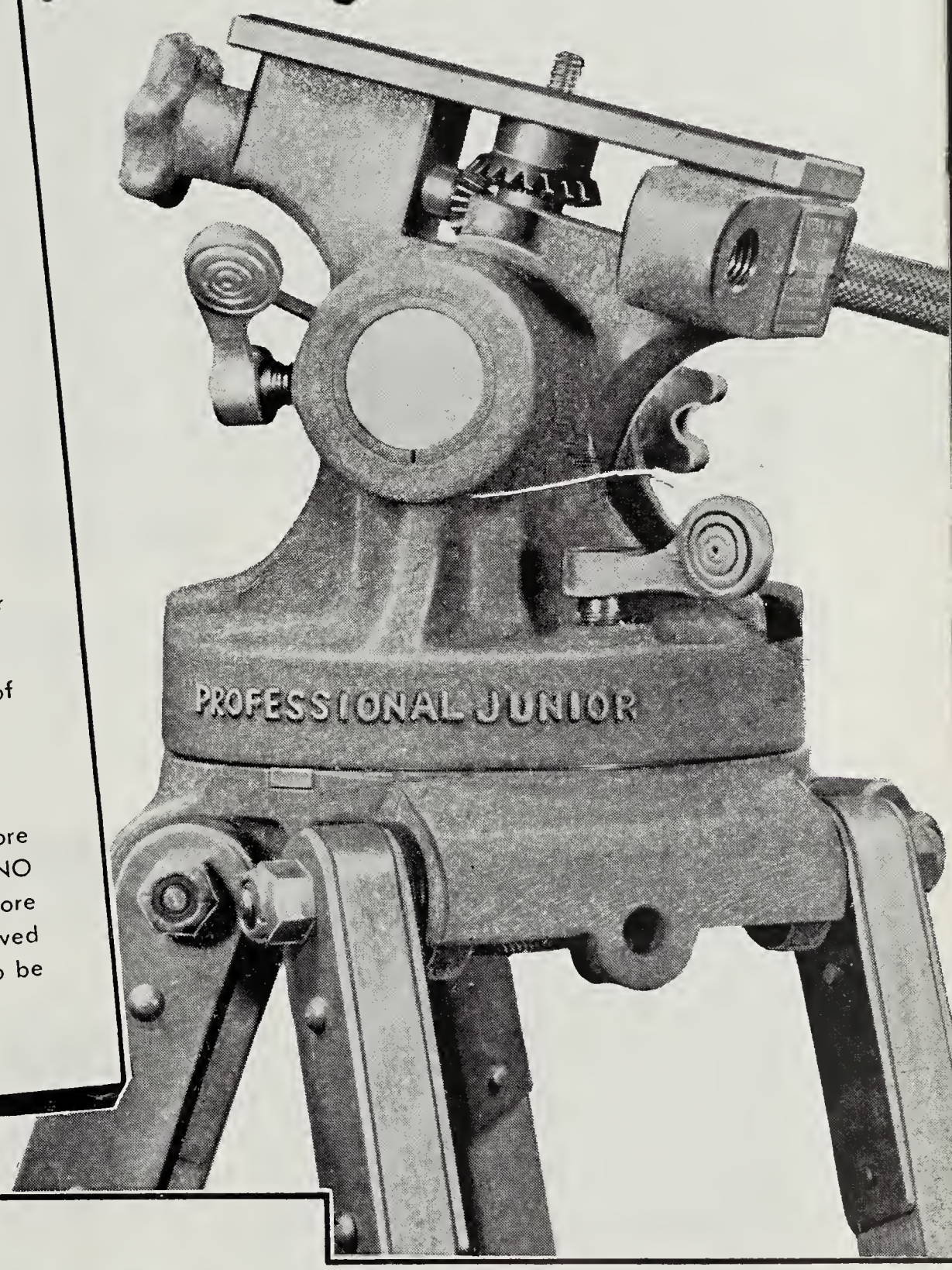
Tripod Perfection!

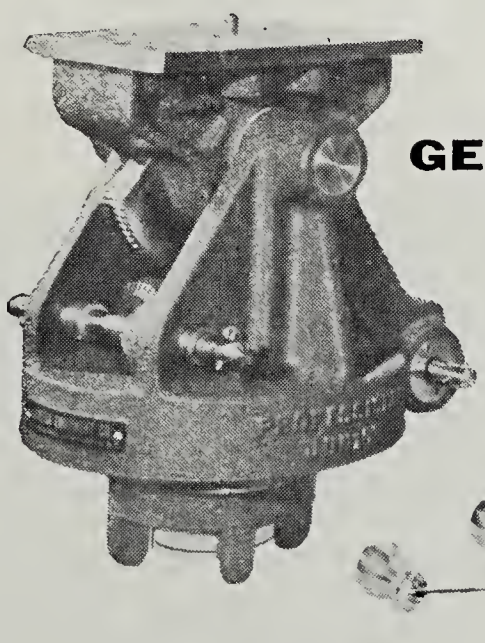
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5. New tie-down eyelets in flange.

You'd expect this outstanding tripod to cost a lot more money, but here's the big surprise—THERE IS NO ADVANCE IN PRICE! For better, smoother, more efficient performance—see, test, try the improved PROFESSIONAL JUNIOR today. You won't want to be without it.

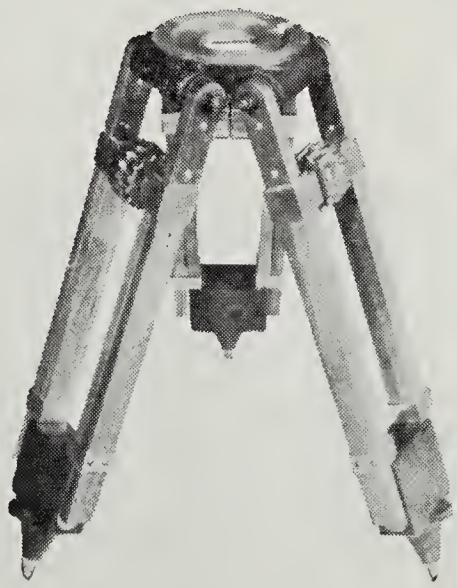




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AMERICAN

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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VOL. 37 SEPTEMBER • 1956 NO. 9

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ON THE COVER

BACKDROPPED by the decaying facade of decrepit old mansion near Greenville, Mississippi, Boris Kauffman's camera crew makes dolly shot of Eli Wallach and Carroll Baker (extreme left) for Warner Brothers' "Baby Doll," directed by Elia Kazan. Kazan and Kauffman (with viewer to eye) may be seen in mansion doorway. Photo shows interesting technical aspects of how shot was made, with camera dolly moving on tracks laid on porch while mike-boom dolly is being rolled on ground. The type of lights used and their placement is also shown to advantage.—*Photo by Floyd McCarty.*

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Canada, $4.00 per year; Foreign, including Pan-American Union, $5.00 per year. Single copies 35 cents; back numbers 40 cents; foreign single copies, 40 cents; back numbers, 45 cents. Advertising rates on application. Copyright 1956 by A. S. C. Agency, Inc.



Mitchell Camera Films full color panoramic views of Roman Soldier sequence from the Bob Jones University Film, "Wine of Morning."

UNIVERSITY MAKES FEATURE FILM

University Film Production Unit Shoots Full-Length Motion Picture on Campus

In Greenville, South Carolina, Bob Jones University is demonstrating a remarkable new trend in campus-produced films. This institution has not only reduced filming costs, but has created professional theatre-quality films, like the full-length, feature "Wine of Morning," to equal Hollywood's best efforts.

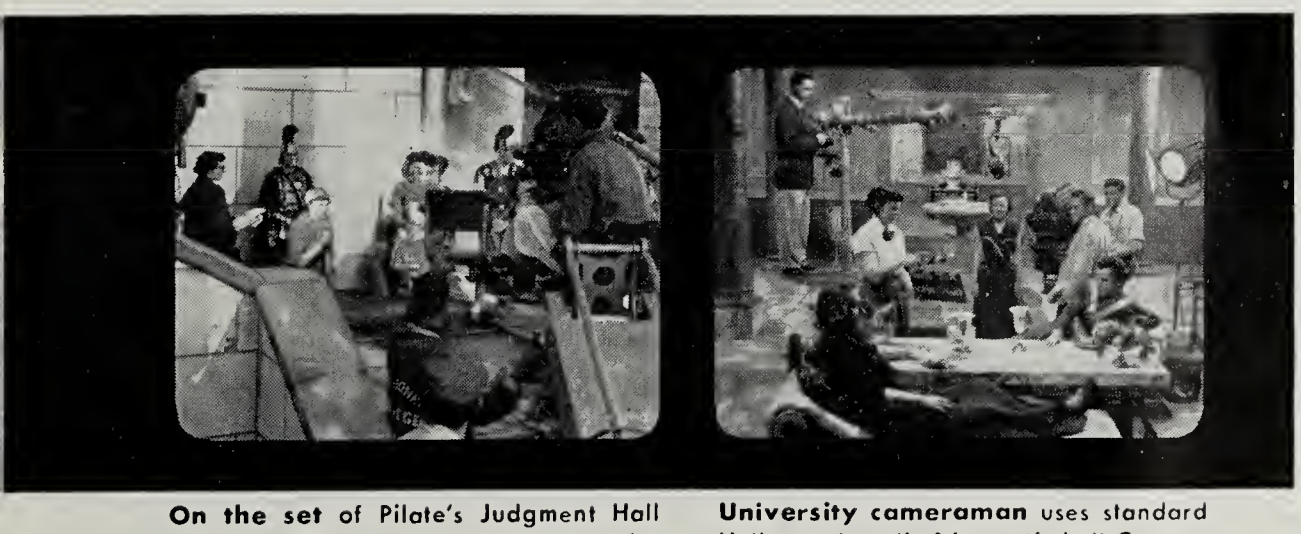
These remarkable changes have been accomplished through the application of motion picture set techniques and the adoption of professional equipment used by major motion picture studios. The leading example of this development is seen in the increased use of the Mitchell 16mm Professional Camera, whose service-free operation and broad range of use has materially cut the costs of campus film production. Representative of film departments owning Mitchell Cameras are: Bob Jones University, Georgia Institute of Technology, Moody Institute of Science, and the Universities of California...Mississippi...Southern California...and Washington.

Complete information on Mitchell Cameras is available upon request on your letterhead.



Camera instructions ore given by Mrs. Kotherine Stenholm, Director of the Bob Jones University's film unit.

★85% of the professional motion pictures shown throughout the world are filmed with a Mitchell Camera.

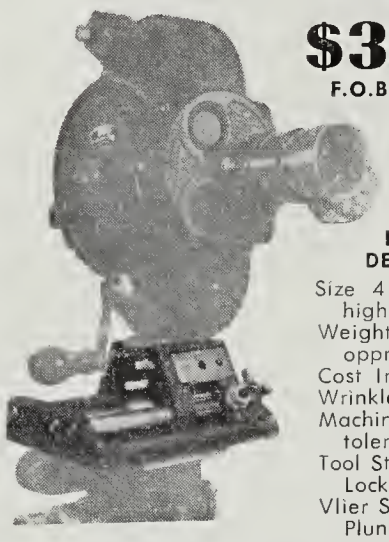


On the set of Pilate's Judgment Hall the Mitchell Camera focuses on set details created by students.

University cameraman uses standard Hollywood studio 16mm Mitchell Camera for interior scene.

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For all Bell & Howell 70 Cameras & Bolex "H" Cameras



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- Can be racked over ond baked **instantly.**

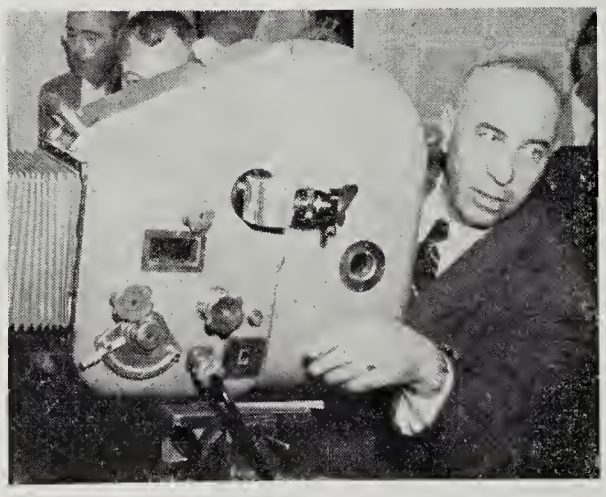
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INDUSTRY NEWS

Camerette goes to Houston-Fearless . . . John Arnold leaves Metro-Goldwn-Mayer



BENJAMIN BERG and Eclair Camerette go to Houston-Fearless Corporation, Los Angeles.

Big news in the equipment field is the acquisition last month by Houston-Fearless Corporation of the U.S. distributorship for Eclair Camerette and associated equipment. Franchise, formerly held by Benjamin Berg, Hollywood, was acquired along with Berg's services as consultant.

Simultaneously, Houston-Fearless acquired from Eclair, in Paris, a license which ultimately will lead to H-F manufacturing the Eclair camera in the United States.

Berg's services as consultant will permit him to continue operation of his equipment rental-sales business at 1014 Van Ness Avenue, Hollywood. Deal with Houston-Fearless culminated with the return of Berg from Europe recently, where he visited photographic equipment centers in Germany, Switzerland and France.

• • •

Dielectric splicing is new method of joining sections of motion picture film without use of solvent-type cements. The electronic method of film splicing, which utilizes radio frequency power to weld film, was demonstrated last month by the Motion Picture Research Council, Hollywood. The result is said to be a stronger and longer lasting fusion.

Development of the new method followed when it was discovered that DuPont's new polyester base film "Cronar" would not fuse properly when regular film cements were used. Subsequent experiments also have shown that triacetate safety base film will respond favorably to the electronic splice.

Other advantages offered by the dielectric method are: 1) film processes using negative requiring a splice of not more than .03 inches gain added strength when fused in this manner; 2) projection life of the release print is greatly increased; and 3) the system is adaptable to splicers now found in studio laboratories.

• • •

Studio Lighting Company, Chicago, which furnishes lighting equipment for motion pictures and TV film production as well as for other purposes, engineered the lighting for the Democratic National Convention in Chicago, which made possible the excellent coverage of the event by television and motion picture cameras.

• • •

Dr. Hans Christoph Wohlrab has been appointed director of engineering of the Professional Equipment and Instrument Division of Bell & Howell Company, Chicago.



Dr. Wohlrab

Dr. Wohlrab comes to Bell & Howell from Karlsruhe, Germany, where he was chief engineer for Siemens & Halske, a producer of electrical supplies, including film and TV equipment. In his new position he will be responsible for technical market evaluation, research and new product development in the professional motion picture field.

Since 1948 his work has been in the field of magnetic sound. He developed the first feature picture stereophonic sound recording set for Realfilm in Germany, and the multiple magnetic sound printer for DeLuxe Laboratories, New York, first used by 20th Century-Fox in recording sound for "The Robe."

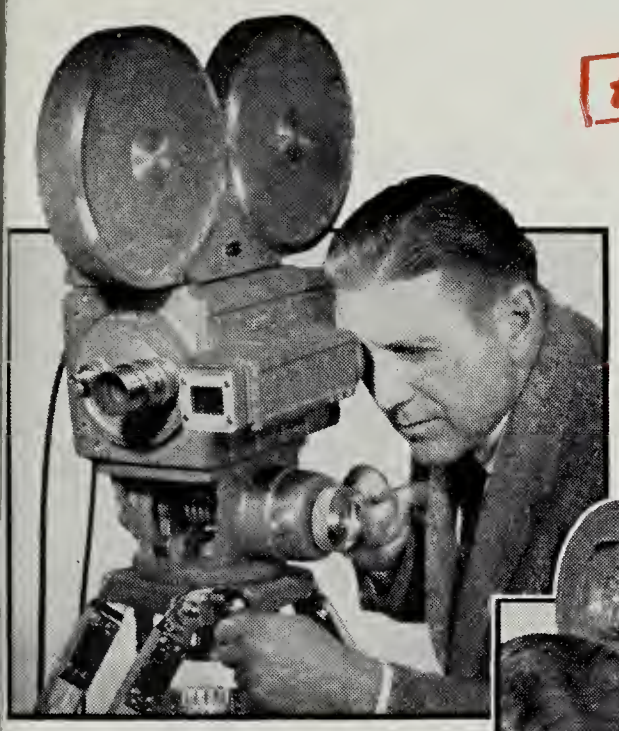
• • •

Sylvania Electric Products Co. has established a Special Lamps Application Laboratory at Los Angeles, one of the purposes of which is to help solve lighting problems in the motion picture industry.

Laboratory staff will work with representatives of the various major studios to determine the best applications of new lighting designs. Lab will be under the direction of Richard H. Lindeberg, special lighting product sales manager for the west coast. Assisting Lindeberg

(Continued on Page 514)

Auricon Hollywood



"Auricon Pro-600"
with Single-Lens "C" Mount,
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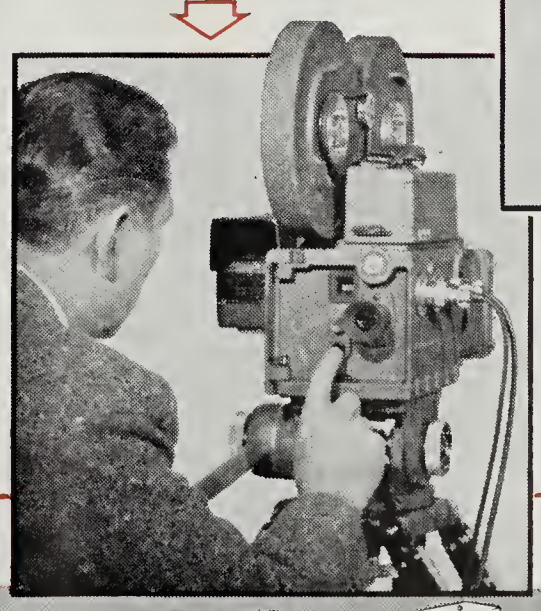
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features Push-Button "On-Off,"
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film-flow mechanism.



"Auricon Pro-600"
Turret Model with
"Zoom" type Lens
and Finder in use.

Auricon Hollywood

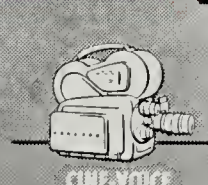
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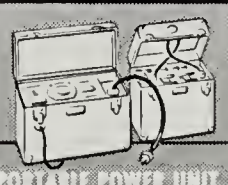
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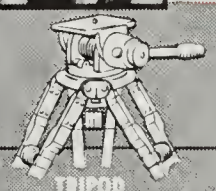
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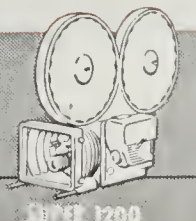
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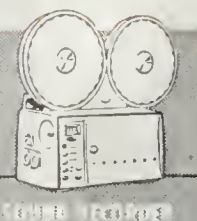
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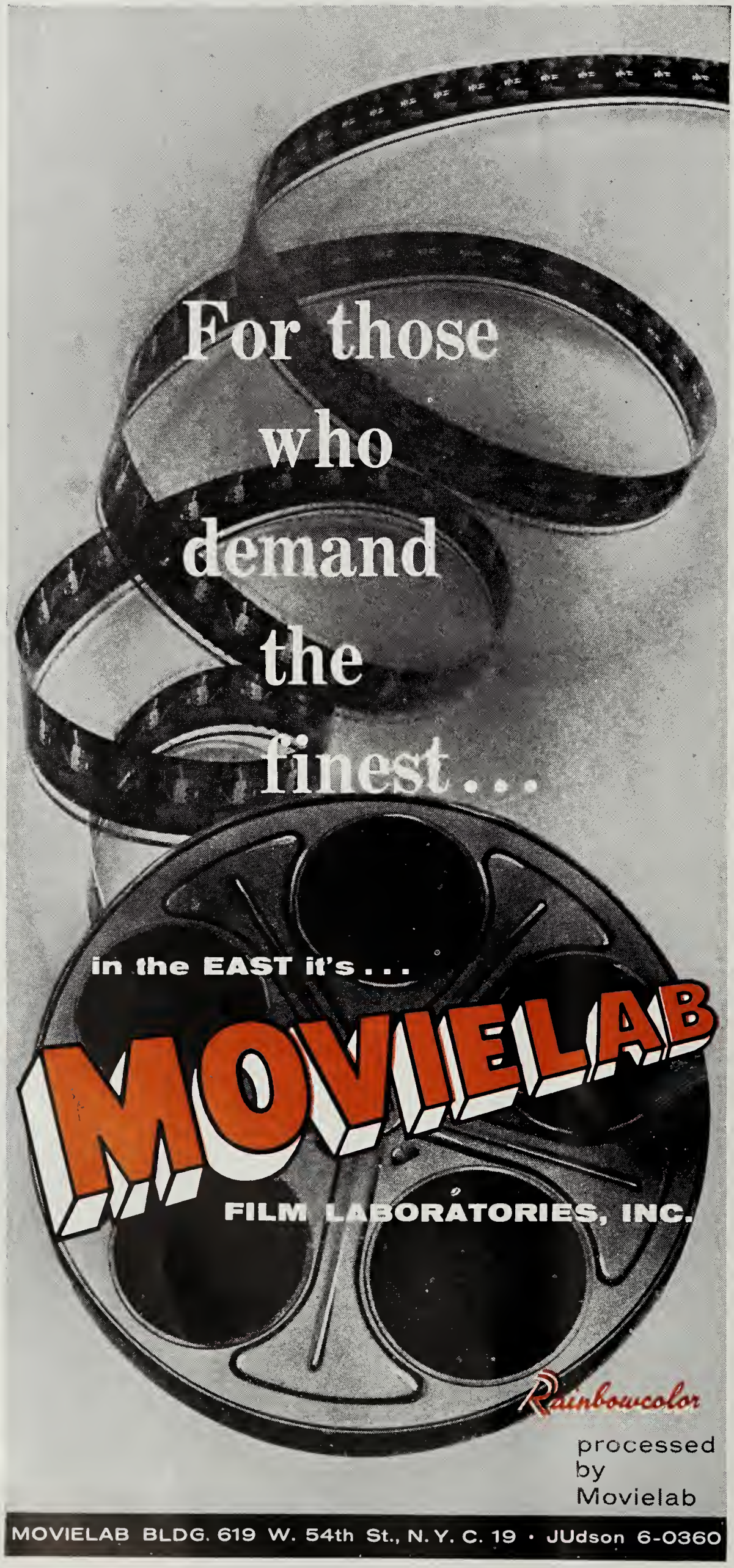
TRIPOD
$325.00



SUPER 1200
$4652.15



$3359.00



INDUSTRY NEWS

(Continued from Page 512)

will be Ernest C. Curwen, veteran Sylvania engineer.

"With the laboratory located near the headquarters of most major studios," said Lindeberg, "lighting problems and the application of new lighting designs can be solved with greater dispatch."

• • •

John Arnold, ASC, head of the camera department at Metro-Goldwyn-Mayer studio for the past 25 years, has tendered his resignation after more than 40 years of continuous service with that company.


John Arnold

Arnold was previously a cameraman with the old Metro Pictures Corporation, and when that company was merged, along with the Goldwyn and the Mayer film production companies in 1924 to form the then largest single motion picture producing company, Arnold moved to the Culver City lot along with a number of other Metro veterans.

During his association with MGM, Arnold has developed and patented hundreds of items of motion picture equipment ranging from camera booms to cameras, all of which have been assigned to the studio.

He was elected President of the American Society of Cinematographers in 1931 which post he held for six years—the only ASC member ever to be so honored. He was re-elected to the ASC presidency in 1939, serving through 1941.

While it is expected that Arnold will continue active in the industry, he has made no announcement of his future plans.

• • •

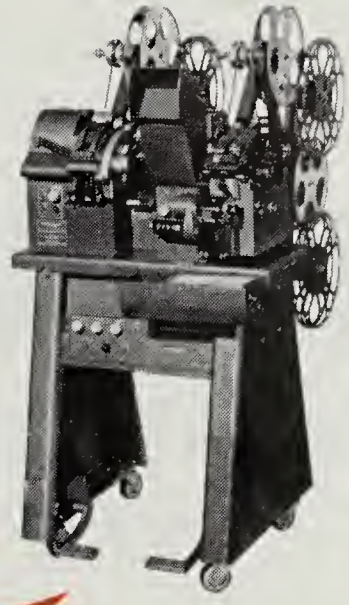
A new development contract with the Wright Air Development Command's Aerial Reconnaissance Lab, brings to five the number of contracts totalling $636,000 awarded this year to the Photo Processing Equipment Section of Fairchild Camera & Instrument Corporation's Reconnaissance Systems Division.

The contract, for the design of an airborne 35mm film processing machine is expected to prove the feasibility of recording a TV viewer on film and immediately processing this film at speeds as fast as 90 feet per minute.

The first six month's phase will include study on the chemistry, emulsions, application techniques and drying methods; the last six months phase will be the fabrication of a prototype "breadboard" to meet operational requirements.

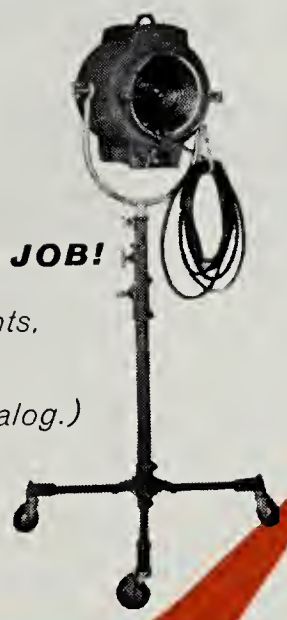
AT LAST! A FLEXIBLE EDITING MACHINE!

(Now, on ONE editing machine, the McAlister EDIMAC, you can run 16 or 35 sound with 16 or 35 picture. It's 4 machines in 1. Write for folder.)



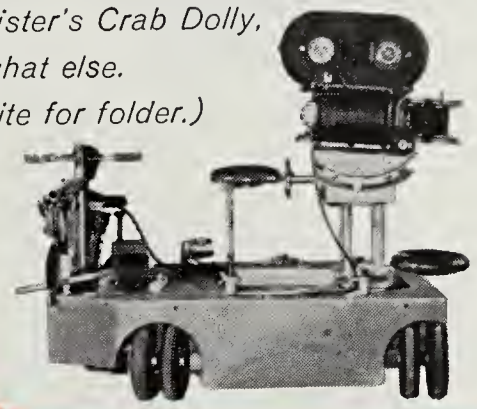
GOOD LIGHTING JOB!

(McAlister lights, of course! Send for catalog.)



PERFECT DOLLY SHOT!

(McAlister's Crab Dolly, what else. Write for folder.)



J. G. McAlister Inc.
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Hollywood 38, California

Foreign Distribution:

CINEQUIPMENT INTERNATIONAL
5880 Hollywood Boulevard
Hollywood 28, California

CINEQUIPMENT FILMGERATE GMBH
7 Theatinerstrasse
Munich, Germany

for the newest, most advanced lighting and production equipment

J. G. McAlister Inc.

F&B PARADE OF NEW PRODUCTS



NEW F&B "CINEVOICE 400"

CONVERSION for 400 ft.

DOES NOT cut down your camera . . .
DOES NOT require an auxiliary motor . . .
CAN STILL be used as the originol 100 ft. camera when necessary.

PLUS . . . ALL THESE BUILT-IN FEATURES

1. SILENCED VEEDER footage counter.
2. Built-in behind the lens filter slot, with two filter holders.
3. Headphone jack built-in to the camera.
4. Cannon plungs for all sound sockets.
5. Tripod socket rebushed with brass insert.
6. New neon operoting signal light.

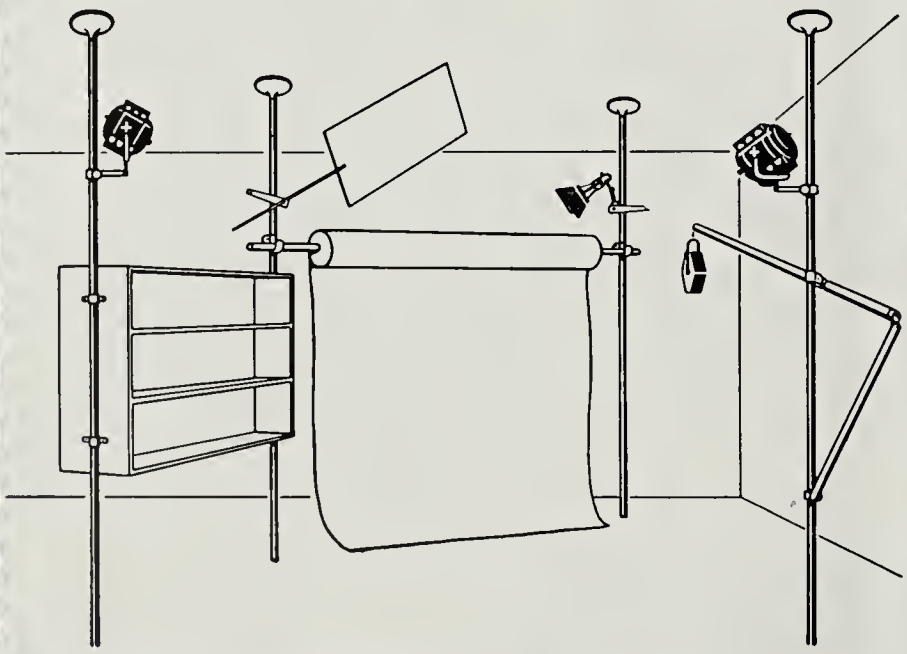
PLUS . . . COMPLETE REFINISHING . . .

Your Cinevoice camera and 400 ft. magazine completely overhauled, cleaned up and re-finished in beautiful professional black crackle finish.

YET . . . F&B "CINEVOICE 400" IS THE LOWEST PRICED CONVERSION AVAILABLE . . .

B&H 400' mag. **$165.00**
PRICE . . . **$345.00**

"POLECAT"



A NEW WAY TO HOLD THINGS UP . . . ANYWHERE . . . LIGHTS - PROPS - BACKGROUNDS - MIKES

Without Nails or Screws - With

POLECAT is a featherweight, telescoping column of 1 ½ inch anodized aluminum with an expansion spring in the top. Adjust it once to your ceiling height with locking collar. Then just spring it in an dout of place as you please. Rubber pads top and bottom protect ceilings and floors. POLECAT can't be knocked over . . . and takes less floor space than a silver dollar.



Adjust — push up — it's done

HOLDS 400 POUNDS. Makes a perfect, mobile, lightweight for lights. Two POLECATS with cross piece and fitting can be used to hold a roll of background paper, props, flats, etc. Perfect for location filming.

BROCHURE ON REQUEST



TEWE DIRECTORS FINDER

Imported from Germany, at o New Low Price, F&B presents the most efficient and useful directors viewfinder now available.

In 2 Models—The 35mm model includes scales for widescreen as well as standard focal lengths from 25mm to 200mmand image orithican cameras. Masks give correct field of view for widescreen ratios as follows:

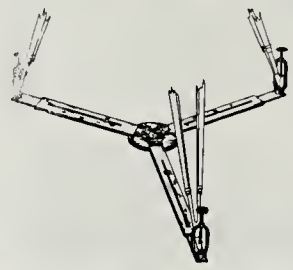
1:1.75 1:1.85 1:2.33 1:2.55 (Cinemascope)

The 16mm models covers focal lengths from 11.5mm to 75mm.

Price **$49.50** includes neck chain and leather case.

Masks—**$3.95** each.

F&B LEG-LOK TRIANGLE

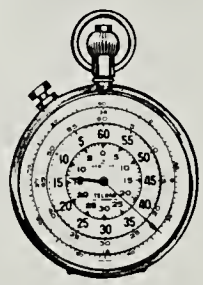


Sturdy metal triangle locks tripod legs in position. One man can move camera, tripod and triangle. Gives absolute safety ond rigidity on wooden, composition, concrete, metal and slippery floors. Price **$26.95**



MOVIOLA TITEWIND

A New Product By A Famous Company. Compact, Efficient Unit For 16mm, 17 ½-mm or 35mm. Can Be Used As Regular Rewinder Also Or In Combination With All Other Units. Includes Double-Duty Hub For Male & Female Plastic Cores. Immediate Delivery **$33.00**

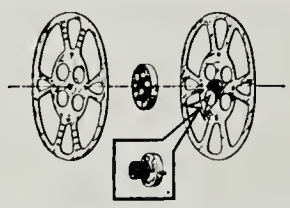


TELERAD STOPWATCH

The Only Precision Timer Completely Designed to Front Time and Back Time For Minutes and Seconds. Other Features:

* Film Meter For 16mm & 35mm
* Luminous Hands & Dials
* Anti-Magnetic, Double-Cased, Dustproof, Precision Highly Sewelled Movement.
* Split Second Timing.

List Price $89.50 Special Offer **$39.75**



F&B SPLIT REELS

SIMPLE SPLIT REEL METHOD SAVES TIME . . SPACE . . MONEY . .

You can project, edit, synchonize, clean, and inspect film . . . on cores, without rewinding, by simply slipping them into F&B SPLIT REELS . . . Store all your film on cores . . . reduce your storoge spoce 50%, without tying up valuable reels . . . and yet be ready to use film at a moment's notice without rewinding, without flanges or expensive titewinds . . . and without danger of the reel unwinding or the center dropping out.

400 ft 16mm Split reel..... 4.50 1200 ft 16mm Split reel..... 7.50
800 ft. 16mm Split reel..... 6.00 1600 ft 16mm Split reel..... 9.00

. . . NEW . . . ALUMINUM SPLIT REELS FOR 16mm & 17½mm MAGNETIC FILM

400 ft. 16 mm 8.50
1200 ft. 16 mm 12.50
17½mm reel . . . 50c extra

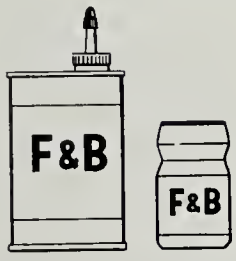
F&B PARADE OF NEW PRODUCTS· F&B PARADE OF NEW PRODUCTS

F&B PARADE OF NEW PRODUCTS

F&B FILM CEMENT

WATCH YOUR SPLICING PROBLEMS DISAPPEAR

This new film cement took a famous chemical laboratory fully four years to develop and perfect. It contains a new ingredient, never before used in any formula —which serves to make this the most efficient film cement now on the market.



Florman & Babb invites you to write for a free sample or place your order now for earliest delivery.

Caution: Do not mix F&B film cement with any other brand. The ingredients do not blend.

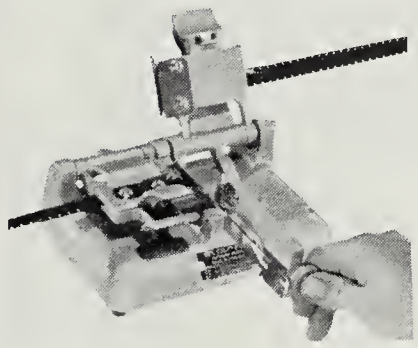
2 oz. .40
½ pt. **1.50**
1 pt. **2.50**

DEALER INQUIRIES INVITED

AUTO-MATIC SPLICER

for 8mm-16mm combination & 35mm with the Exclusive PRESET SCRAPER!

A PERFECT SPLICE EVERY TIME



The major cause of film failures is poor splicing . . . and the major cause of poor splicing is improper scraping (either too much or too little). Solve both of these problems with its automatic scraper that takes off exactly the right depth of emulsion every time . . . regardless of applied pressure.

Automatic splicer is a precision tool . . . imported from England. It has a precision-ground, tungsten steel scraper that is preset and ready for making thousands of splices.

BROCHURE ON REQUEST

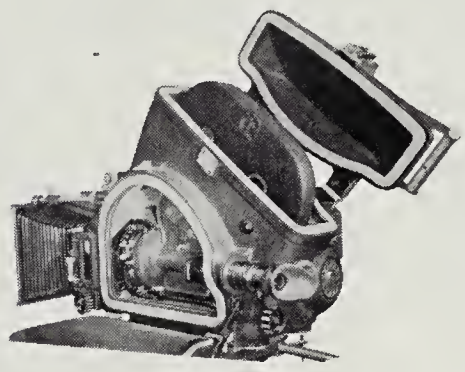
F&B GRIP STAND & FLAGS



New heavyweight, cast iron sturdy grip stands, suitable for studio or location use. Single extension tubes, 1 low leg for sliding under light stands. Includes rod adapter, 4 foot extension arm & flag holder 3 sizes.

#1—4′ to 6′ **$36.00**
#2—5′ to 8′ **42.00**
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ARRIFLEX CAMERAS



For ARRIFLEX sales - service rental - repair

You can't do better than F&B All model cameras and accessories available for immediate delivery.

F&B are always ready and willing to demonstrate and instruct on ARRI products.

PERMACEL

PERMACEL & 3M PERFORATED SPLICING TAPE

Pressure sensitive adhesive tape, POLYESTER backing

For butt-splicing, lap splicing, repairing all types of film and magnetic film.

66 ft. roll 16mm Single perf — clear **$5.00**
66 ft. roll 16mm Single perf for magnetic **6.60**
66 ft. roll 16mm Double perf — clear **5.00**
66 ft. roll 35mm—clear **9.00**
66 ft. roll 35mm for magnetic **11.00**

(MAGNETIC SLICERS AVAILABLE)

RECORDING TAPE

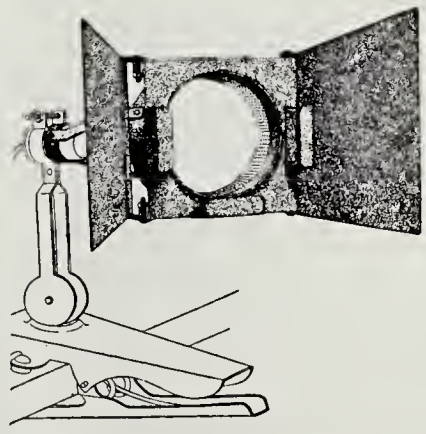
Excellent quality plastic base ¼" recording tape—Purchased in huge quantities direct from factory. Savings are passed on to you.

7"-1200 ft. REEL— **$1.74** each 3 for **$4.95**

7"-1800 ft. REEL— **$1.95** each 3 for **$5.45**

Please include postage with order

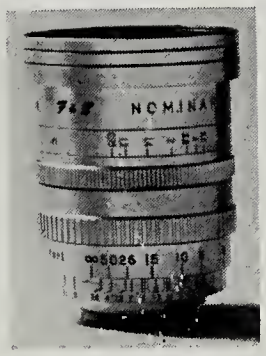
Full moneyback refund guaranteed—If you are dissatisfied—For any reason—Just send it back.



F&B GATOR-GRIP LITES

With barn doors. Hangs from a nail—clamps securely to doors, chairs, flats or stands. Barn door swivels 360°. Accepts diffusers, filters etc. Price **$12.95** complete.

F&B NOMINAR



1" f/0.05 LENS

"The Fastest Lens in the World"

FOR ALL 16MM CAMERAS

Hundreds being used successfully by . . .

- Industrial film producers
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PRICE $174.90

includes . . . Ser VI filter holder, leather case.

16mm B&H type OBJECTIVE FINDERS

10mm - 13mm - 15mm
17mm - 3 inch

$5.95 each

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List all equipment you need for film production. Cameras, Tripods, Lenses. Editing equipment. Lighting equipment, etc.

F&B RENTAL PRICE LIST

Complete 16-page, pocket-size price list. Everything at your fingertips about the cost of renting equipment for Production, Projection, Recording, Lighting and Editing.

BOTH CATALOGS FREE FOR THE ASKING

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68 West 45th Street, New York 36, N. Y.

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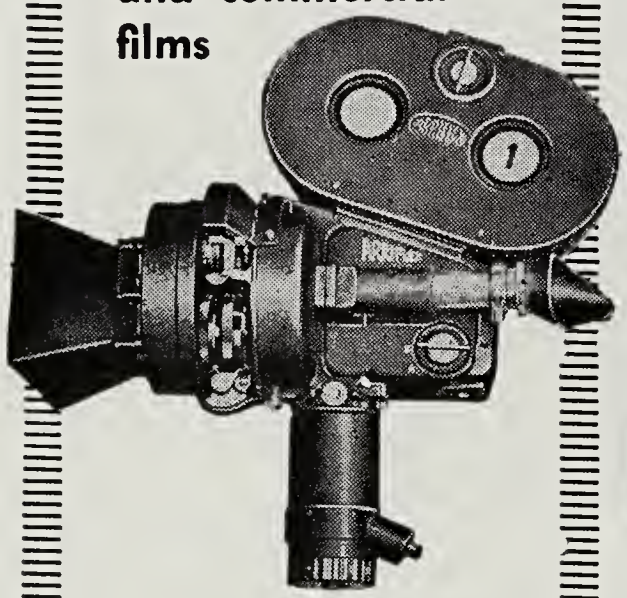
Cable Address — FLORBABB, N. Y.

ARRIFLEX

New 35 mm Model 2A
With 180° Shutter

A TRULY GREAT CAMERA

for TV, Newsreel and commercial films



For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

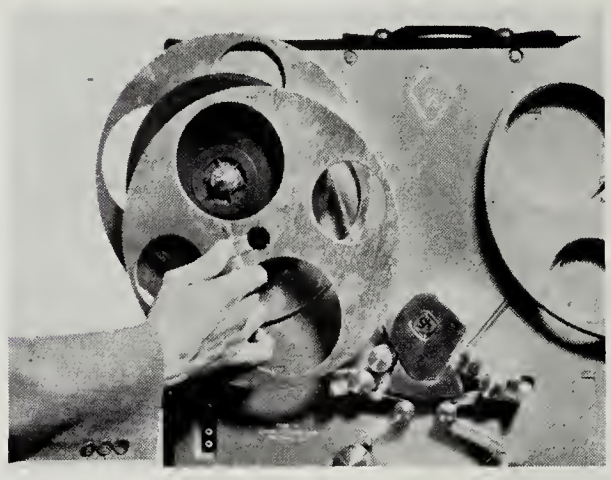
Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200' or 400' magazine. Write for free folder.

Blimp now available.
16mm ARRIFLEX also available.

FRANK C. ZUCKER
CAMERA EQUIPMENT CO.
315 West 43rd Street, New York 36, N. Y.

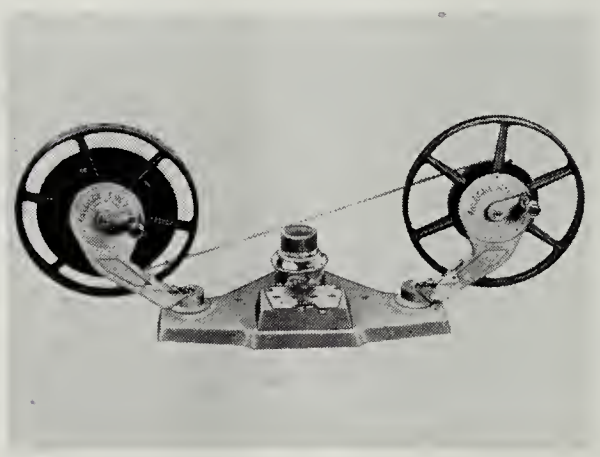
WHAT'S NEW

. . . in equipment, accessories, service



Detachable Flange Reels

Stancil-Hoffman Corp., 921 N. Highland, Los Angeles 38, Calif., announces a quick-loading film reel for magnetic recorders. The 1200-ft. reel features a removable flange which allows raw stock to slip over reel hub. Constructed of aluminum to prevent demagnitizing recordings. Reels are available for 16mm, 17.5mm and 35mm film, may also be used on motion picture film equipment.

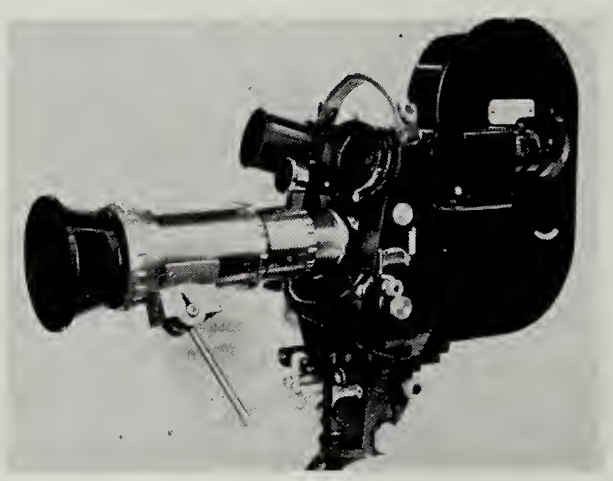


Splicer-Rewinder

Kalart, Plainville, Conn., announces its Custom "8" Splicer-Rewinder combination for 8mm film in a single, compact, collapsible unit. Folded, the unit is only 9½" x 5½" x 5½". It accommodates 400-ft. reels. List price is $10.95.

Kodaguide Movie Dial

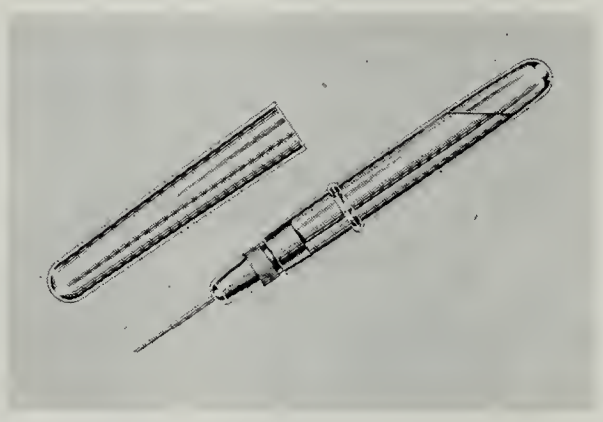
A revised Kodaguide Movie Dial, for use with Kodachrome, Plus-X and Tri-X movie films, has been announced by Eastman Kodak Co., Rochester, N.Y. Dial of pocket-size indicator shows at glance proper lens openings for the four most common outdoor lighting conditions. Another dial shows correct exposures for indoor cine photography. Price is 25¢.



Pan-Cinor Zoom Lens

The Benjamin Berg Co., 1410 No. Van Ness Ave., Hollywood 28, Calif., has been appointed distributors for the Som Berthiot Pan-Cinor Zoom Lens. The 4" lens for 35mm cameras has a range from 38.5mm to 154mm; an aperture range from f/3.8 to f/22, and a focusing range from 6½-ft. to infinity. Net weight is 4½ lbs. Total length is 10".

The Pan-Cinor has built-in reflex finder for use with all 35mm cameras except the Camerette, which has its own reflex system Lens is now available for the 35mm Camerette, and will be available for the Mitchell and other 35mm cameras after January 1st.

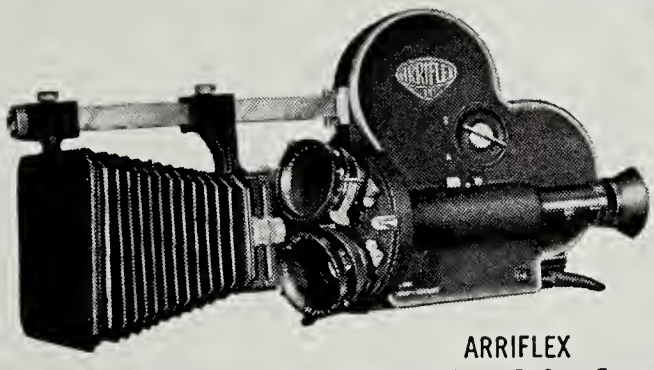


Lubricating Pen

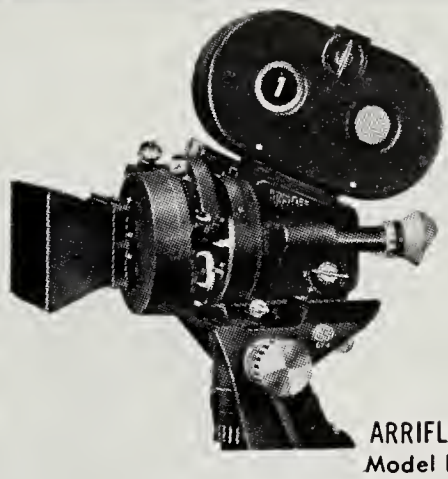
Camera Mart, Inc., 1845 Broadway, N. Y. offers a lightweight, plastic-and-metal precision oiler that looks like a fountain pen and emits a controllable flow of oil through a needle point. List price is $1.69.

Magnetic Recorders

S.O.S. Cinema Supply Corp., New York, has been appointed distributor of Stancil-Hoffman synchronous magnetic recorders.



ARRIFLEX
16mm Mirror Reflex Camero

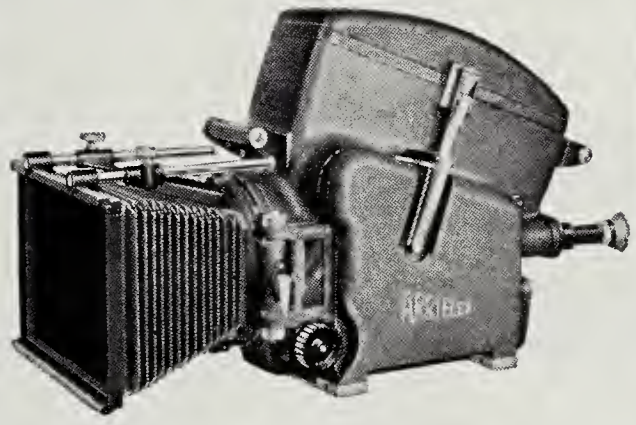


ARRIFLEX
Model IIA
35mm Mirror Reflex Camero

the ARRI® story

MORE THAN 35 YEARS DEVOTED TO THE DEVELOPMENT AND MANUFACTURE OF FINE MOTION PICTURE EQUIPMENT FOR FILMING, PROCESSING AND PRINTING.

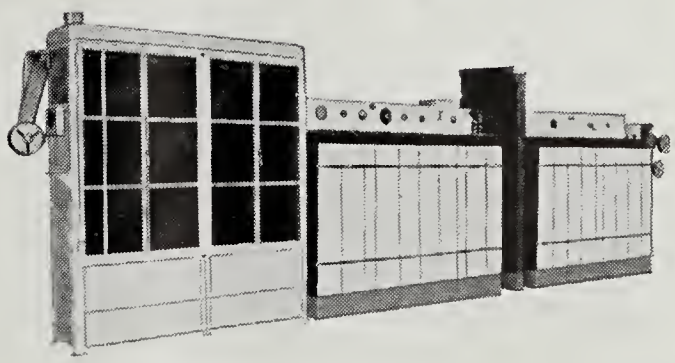
Since the formation of the company in 1919, the name Arnold & Richter has been identified with the finest equipment in the field. Through progress engineering, ARRI technicians have pioneered many advances in movie technique. Today, ARRI Equipment is used the world over—by noted cameramen, in leading laboratories—wherever important films are in the making.



Sound Blimp
for Arri 35mm Camera



Contact and Optical Printers
16mm & 35mm—sound & silent
color and black-and-white



Film Processing Machines
16mm & 35mm—color and block-and-white

Sole U. S. Agents

KLING
PHOTO CORP.
257 FOURTH AVE., NEW YORK 10, N. Y.
7303 Melrose Ave., Hollywood 46, Calif.



a Money Maker

Ideal for TV, newsreel, industrial and educational films. Does complete reversal processing job, from camera to projector, in 25 minutes including developing, reversing, bleaching, fixing, washing, drying, footage count.

A complete negative, positive, and reversal machine. Regular price $5575.66.

USED Sold "As is" **SPECIAL - $995**

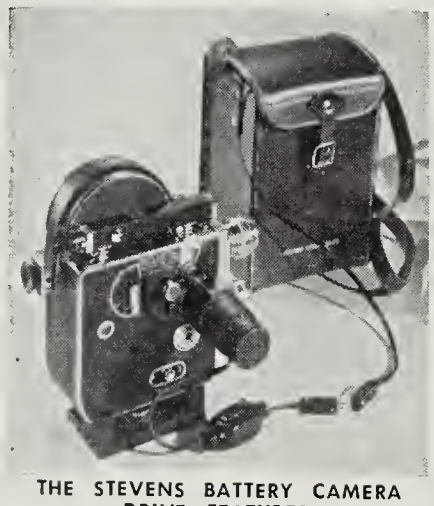
Fully Reconditioned, Guaranteed, $1295.

Houston 16mm Processing Machines

gordon enterprises

5362 NORTH CAHUENGA BOULEVARD
NORTH HOLLYWOOD, CALIFORNIA
TELETYPE: WUX, NORTH HOLLYWOOD

BOLEX ACCESSORIES



THE STEVENS BATTERY CAMERA DRIVE FEATURES:

1—Instant starting
2—Farward ond reverse operation
3—Extremely law current droin
4—Card connecting plug ot the camera
5—Highest-quality canstructian

Write far FREE Bolex accessory baaklet.

A SIMILAR STEVENS CAMERA DRIVE IS NOW AVAILABLE FOR CINE SPECIAL CAMERAS.

Stevens Engineering Co.
2421 Military Ave. Los Angeles 64, Calif.

Scheibe FILTERS EST. 1914
In World-Wide Use

Produce moonlight ond night effects in doytime • fog scenes • diffused focus ond many other effects.

Information mailed on request.

USED IN EVERY HOLLYWOOD MOTION PICTURE PRODUCTION

SCHEIBE FILTERS COMPANY
ORIGINATORS OF EFFECT FILTERS
P.O. Box 46834, Hollywood, Calif.

HOLLYWOOD BULLETIN BOARD

News briefs about the A.S.C. its members, and important industry personalities





50 YEAR SPAN: Arrow in photo at left points to home of American Society of Cinematographers as it looked in 1906, set amidst large orange grove just north of Hollywood Blvd. Photo at right shows same scene today—50 years later. Arrow points to A.S.C. Clubhouse, now partly obscured by growth of trees and shrubs. Today, interior of A.S.C. Clubhouse is undergoing complete modernization and re-decoration. When project is completed, it will be opened to public for inspection.

Charles G. Clarke, ASC, returned to Hollywood from Spain last month, where he had spent a month shooting background scenes for Darryl Zanuck's 20th Century-Fox production, "The Sun Also Rises."



Charles G. Clarke

Clarke is one of the most well-traveled of the industry's directors of photography, having photographed productions or portions of productions in every country but Russia and South America, most of them for T.C.F.

With him on the Spain assignment was operative cameraman Til Gabbani, assistant David Scott McEwen and grip Walter Fritchman.

• • •

Floyd Crosby, ASC, following completion of the photography of "The Old Man of the Sea" for Warner Brothers, has been signed to direct the photography of three pictures for producer-director Roger Corman, Holywood.

• • •

Leon Shamroy, ASC, three-time Academy Award winner who photographed 20th Century-Fox's "The King and I," has been put under new, long-term contract by Fox.

• • •

Joseph LaShelle, ASC, and his camera crew left for New York August 16th to prepare locations there for Hecht-Lancaster's "The Batchelor Party."



INTERESTED LISTENERS, as Peter Mole (left) discusses production trends in European film centers, as glimpsed by him on recent trip, are: left to right, Randolph Terraneau, Lee Garmes, and Robert Linderman. Gabfest preceded recent monthly dinner at ASC clubhouse.

Zoli Vidor, ASC, of New York City, was a Hollywood visitor last month. A member of both New York and Hollywood locals of the I.A.T.S.E., Vidor's assignments have been chiefly TV films made in the Gotham area.



Zoli Vidor

Vidor got his cinematographic start in Germany, coming to U.S. later, where he joined George Pal of "Puppetoon" fame as animation cameraman. In 1948 he set up his own animation business, offering animation services to the 16mm industry. He's been shooting TV films since 1950.

All art is but imitation of nature...

SENECA





Picasso's Head of a Woman courtesy Albert E. Lewin

design NAIDICH / photography LEVITT

. . . and yet you, as the film artist, may depart from realism in order to achieve an effect— you may, in fact, improve upon nature.

We, as technicians, cannot improve upon you. Our goal is to realize your conception; to give you what you set out to get.

Complete 16mm and 35mm services including 16mm color printing.

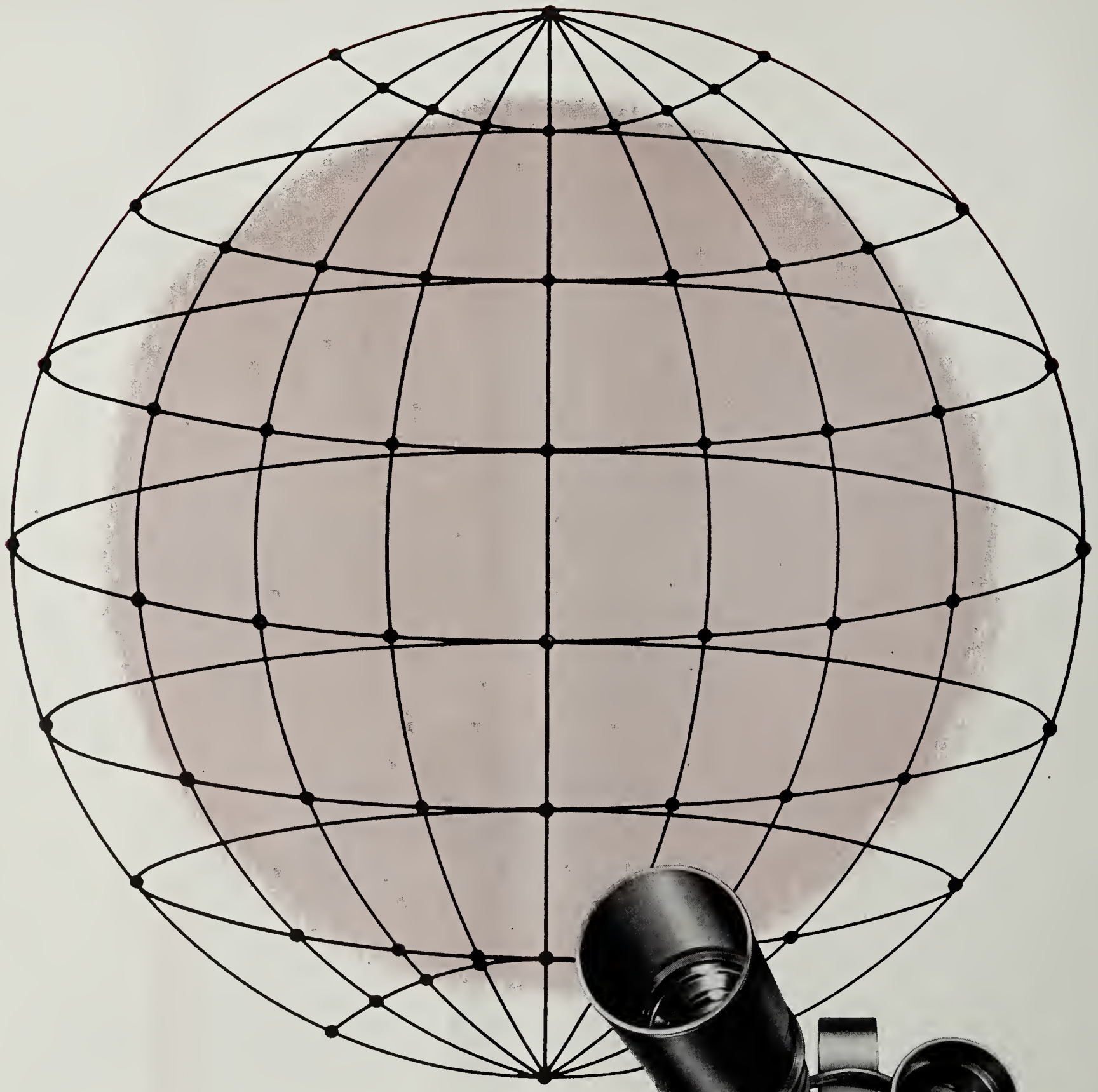
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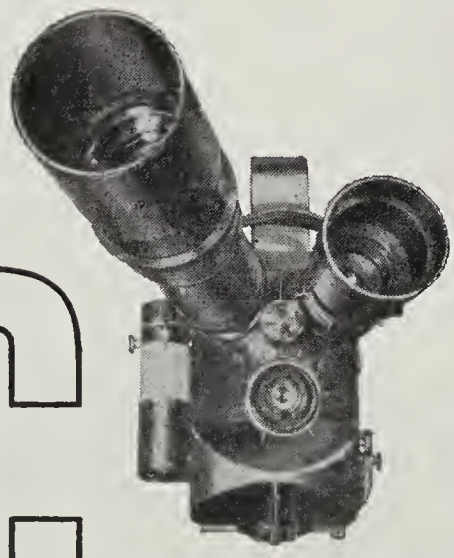
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Photographic Assignments

AUGUST • 1956

Who, where and what the industry's cameramen were shooting last month.

AMERICAN NATIONAL

● Curt Fetters, "The Man Called X," TV, (Ziv-TV) with Barry Sullivan. Eddie Davis, director; "Science Fiction Theatre," TV, (Ziv-TV). Herb Strock, director.

● Bob Hoffman, "Highway Patrol," TV, Ziv-TV, with Broderick Crawford. Lew Landers, director; "Science Fiction Theatre," TV, Ziv-TV. Paul Gilfoyle, director.

● Monroe Askins, "Science Fiction Theatre," TV, Ziv-TV. Eddie Davis, director; "Dr. Christian," TV, Ziv-TV, with MacDonald Carey. Herb Strock, director.

CALIFORNIA STUDIOS

● Fleet Southcott, "Gunsmoke," TV, (Film Center Prod.) with James Arness and Dennis Weaver. Ted Post, director.

● Hal McAlpin, "O. Henry Playhouse," TV, (Gross-Krasne, Inc.) with Thomas Mitchell. Peter Godrey and Barney Girard, directors; "Dr. Hudson's Secret Journal," TV, (Wesmor, Inc.) with John Howard. Peter Godfrey, director.

● Hal McAlpin, "Jet," (Gross-Krasne Prods.) with Preston Foster and Colleen Gray. George Waggner, director.

CARTHAY SOUND STAGE

● William Whitley, ASC, "The Lone Ranger," TV, with Clayton Moore and J. Silverheels. Earl Bellamy and Oscar Rudolph, directors.

● Gil Warrenton, ASC, "The Hanging Judge," with Willard Parker and Mara Corday. Edward Drew, director.

COLUMBIA

● Desmond Dickenson, "Fire Down Below," (Warwick Prod. shooting in Trinidad) with Rita Hayworth, Robert Mitchum and Jack Lemmon. Robert Parrish, director.

● Fred Jackman, Jr., "Rin-Tin-Tin," TV, (Screen Gems) with Lee Aaker and James Brown. Harry Gerstad, director.

● Burnett Guffey, ASC, "End As a Man," (Horizon-American Prod.) (Shooting in Florida) with Ben Gazzara. Jack Garfein, director.

● Wilkie Cooper, "Seven Waves Away," Copa Prods. shooting in London, with Tyron Power and Mai Zetterling. Richard Sale, director.

● Benj. Kline, ASC, Rumble on the Docks," with James Darren and Jerry Janger. Fred S. Sears, director; "Utah Blaine," with Rory Calhoun and Susan Cummings. Fred Sears, director.

● Charles Lawton, ASC, "The Captives," with Randolph Scott. Sam Nelson, director.

● Gert Andersen, ASC, "Ford Theatre," TV, Screen Gems. James Sheldon, director.

● Basil Emmott, "Town On Trial," Marksman Films shooting in London, with John Mills, Charles Coburn, and Ella Raines. John Guillerman, director.

● Ted Moore, "Interpol," (Technicolor-Warwick Prods. shooting in Rome) with Victor Mature and Anita Ekberg. John Gilling, director.

WALT DISNEY

● Gordon Avil, ASC, "The Mickey Mouse Club," TV. Sid Miller, director.

● Walter Castle, ASC, "The Dairy Story," TV. William Beaudine, director.

● Charles Boyle, ASC, "Disneyland," TV. William Beaudine, director.

FILMCRAFT STUDIOS

● Virgil Miller, ASC, "You Bet Your Life," TV, Filmcraft Prods., with Groucho Marx. Robert Dwan, director.

FIVE STAR

● Ray Fernstrom, ASC, Johnson's Wax commercial, TV. Louis Huot, director.

FOX MOVIETONE STUDIOS (New York)

● J. Burgi Contner, ASC, "Jill Corey Show," TV. (Gold Medal Prods.). Marc Daniels, director.

FOX WESTERN AVENUE STUDIOS

● Lloyd Ahern, ASC, "You Are There," TV, TCF TV. William Russell, director.

● Karl Struss, ASC, "My Friend Flicka," TV, TCF TV, with Gene Evans and Anita Louise. John English, director; G. E. Theatre, TV, TCF TV. Lewis Allen, director; "Broken Arrow," TV, TCF TV, with John Lupton. Richard Bare and Alvin Ganzer, directors.

GOLDWYN STUDIOS

● George Clemens, ASC, "Schlitz Playhouse of Stars,' TV, (Meridian Prods.). Various directors.

● Norbert Brodine, ASC, "The Loretta Young Show," TV, Lewislor Inc., with Loretta Young. Various directors.

● Lester White, ASC, "Crossroads," TV, Federal Telefilms, Inc. J. Addiss, director.

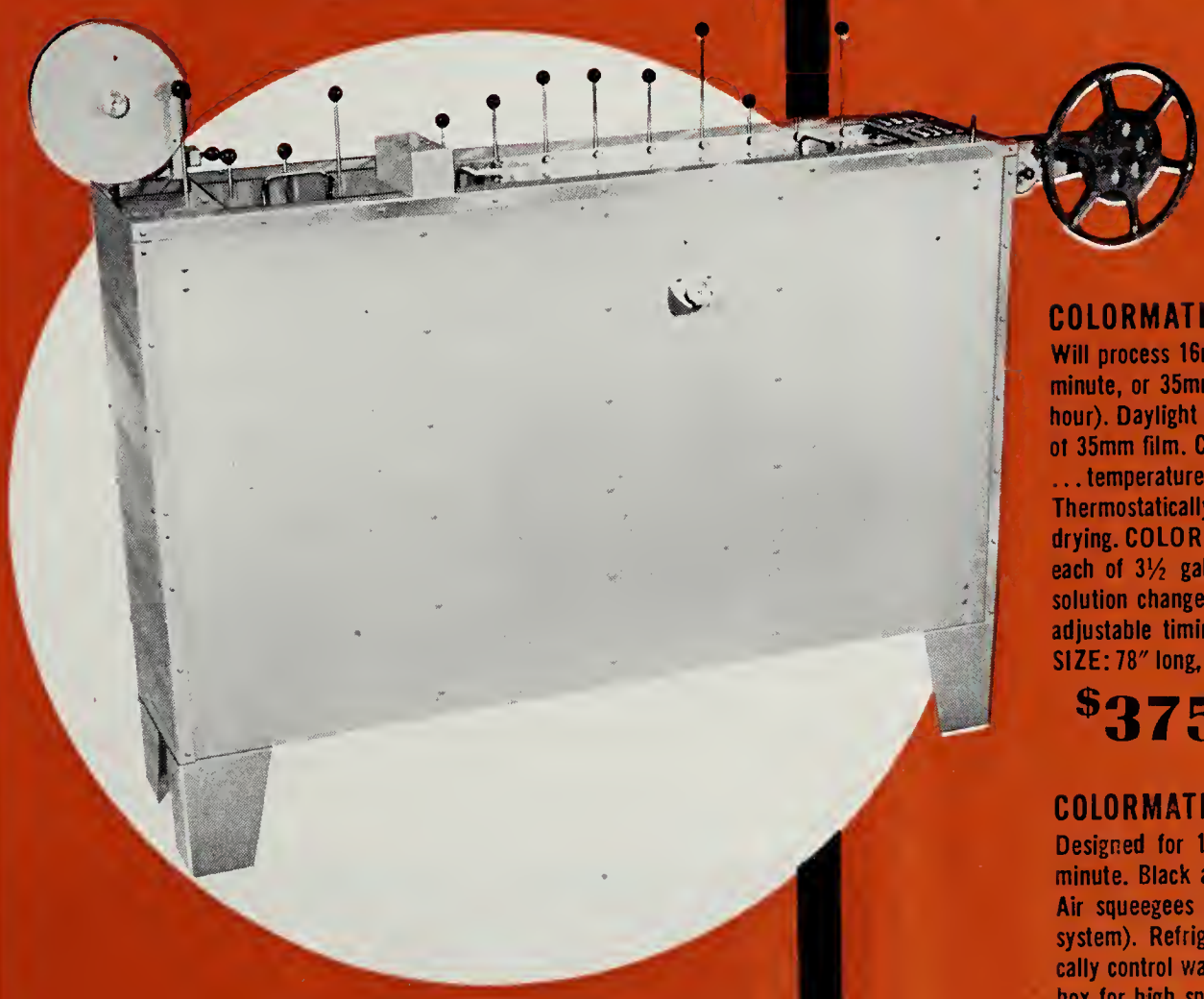
(Continued on Page 528)

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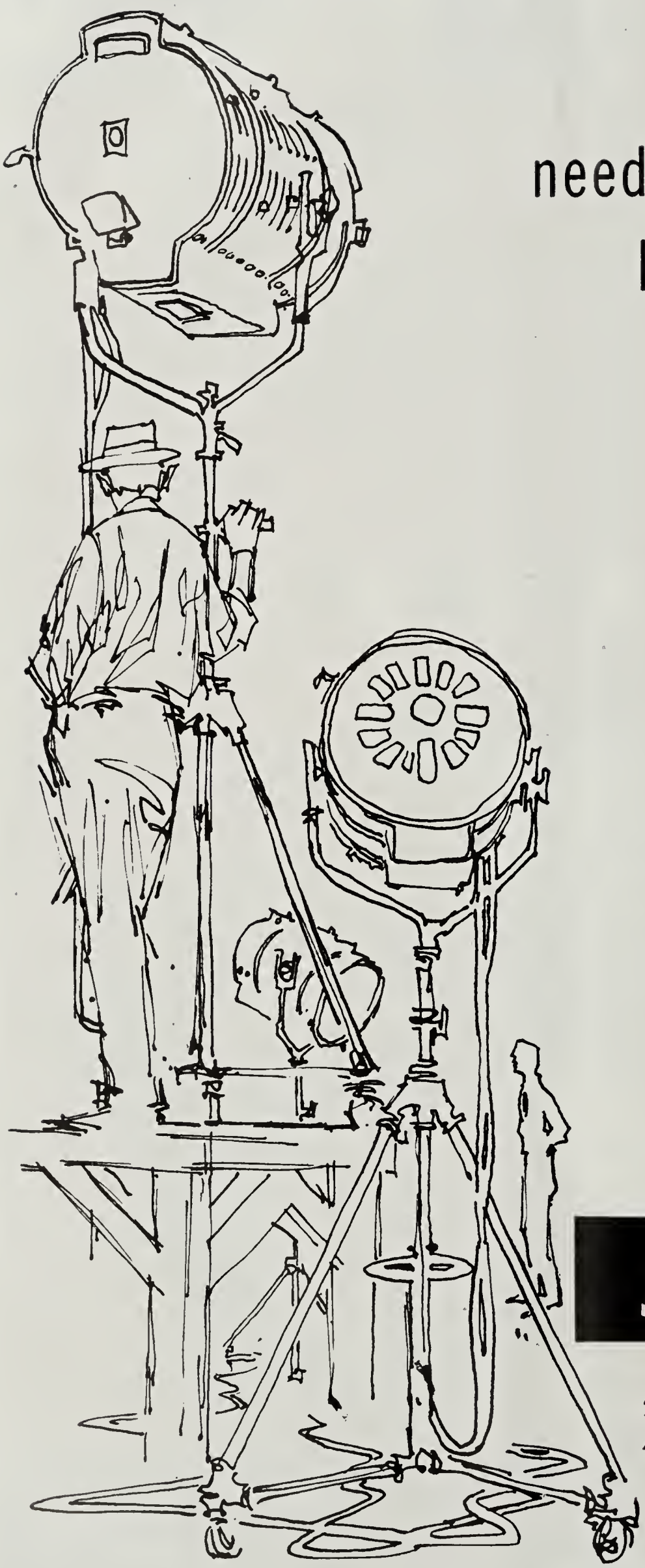
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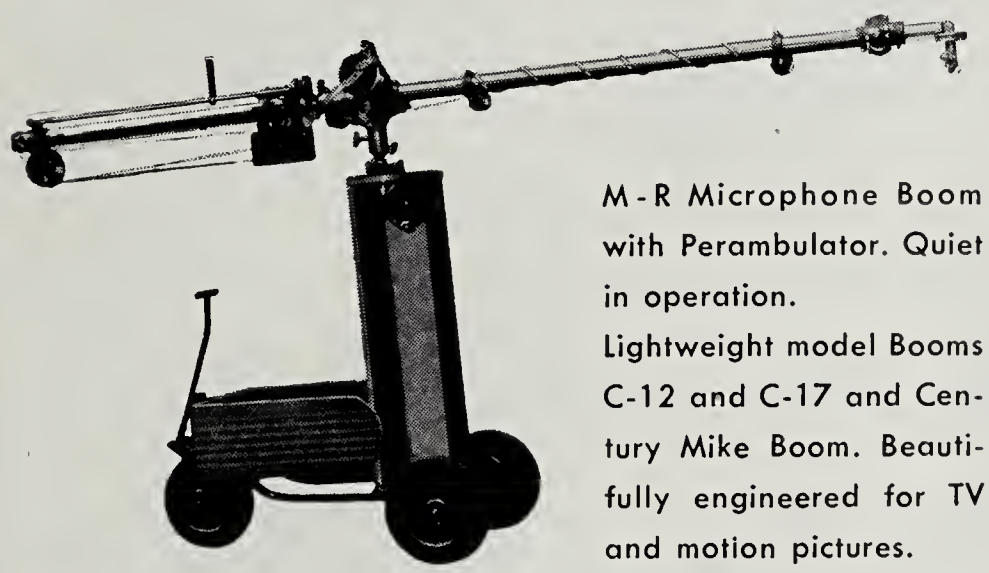
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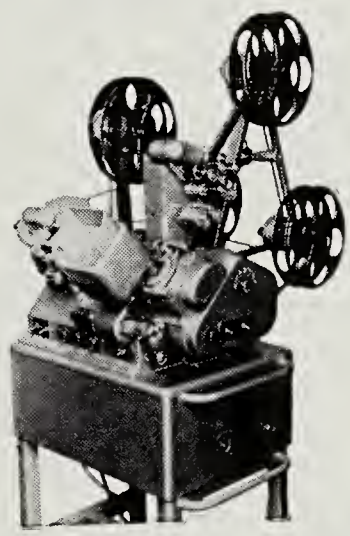
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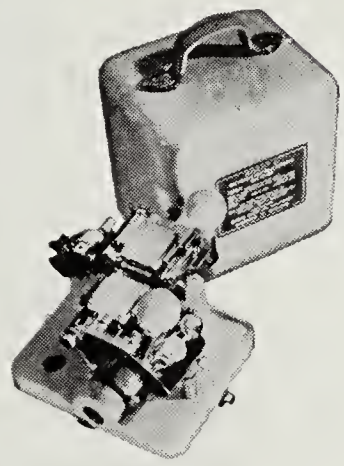
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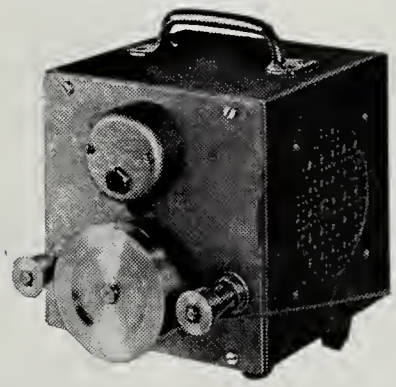
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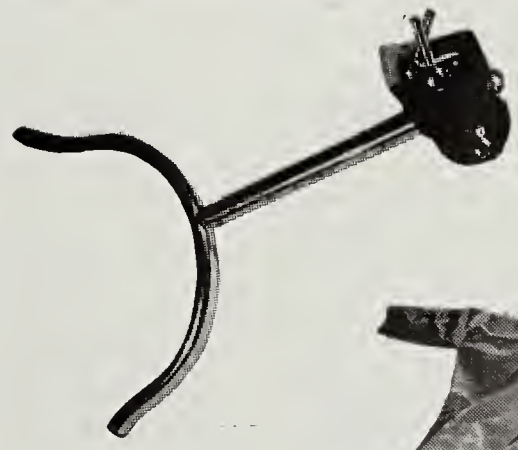
PRECISION SOUND READER

(16-35 COMBINATION)

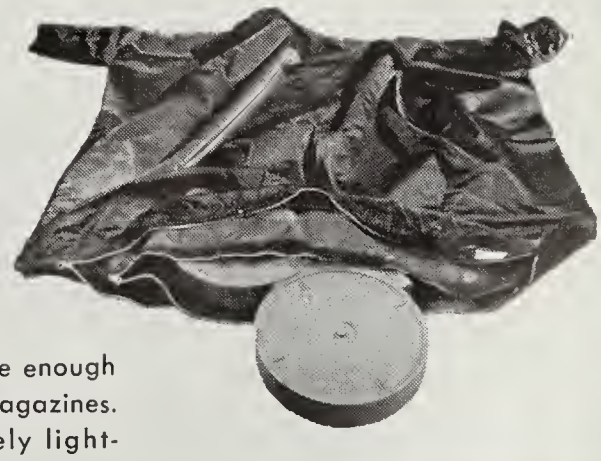
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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 524)

INDEPENDENTS

● FRANK PLANER, ASC, "The Pride and the Passion," (Technicolor; VistaVision) Stanley Kramer Prod. for UA; shooting in Spain) with Cary Grant and Frank Sinatra. Stanley Kramer, producer-director.

● WILFRED M. CLINE, ASC, "Hidden Fear," (Shooting in Copenhagen) (St. Aubrey-Cohn Prods. for United Artists release) with John Payne and Natalie Norwick. Andre De Toth, producer-director.

● ERNEST HALLER, ASC, "Men In War," Security Pictures for UA release, with Robert Ryan, Aldo Ray and Robert Keith. Anthony Mann, director.

● WILIAM SICKNER, ASC, "The Undead," Roger Corman Prod. for American Int'l release, with Pamela Duncan and Richard Garland. Roger Corman, producer-director.

● BRYDON BAKER, "Snowfire," (McGowan Brothers Studio) with Don Mollie, and Melody McGowan. Stuart McGowan, director.

● GUISEPPE ROTUNNO, "The Monte Carlo Story," (Titanus Prod. shooting in Monte Carlo for U.A. release) with Vittoro De Sica and Marlene Dietrich. Samuel Taylor, director.

● ELLSWORTH FREDRICKS, ASC, "The Buckskin Lady," (Bishop-Hittleman Pictures-U.A. release) with Patricia Medina and Richard Denning. Carl K. Hittleman, director.

● FLOYD CROSBY, ASC, "Shark Reef," (James O. Radford, Inc. shooting in Hawaii) with Bill Cord and Lisa Montell. Roger Corman, producer-director.

● ALAN STENSVOLD, ASC, "The Fever Tree," (Dudley Pictures shooting in Cuba) with John Cassevetes and Sara Shane. Laslo Benedek, director.

● JOSEPH LASHELLE, ASC, "The Bachelor Party," (UA release, Norma Prods.) with Don Murray, E. G. Marshall and Jack Warden. Delbert Mann, director.

● FRED WEST, ASC, "Shake, Rattle and Rock," (Sunset Prod., American Int'l release) with Lisa Gaye and Touch Connors. Edward L. Cahn, director.

● BILL THOMPSON, ASC, "New Refugee," with Jacques Scott and Jean-Ann Lewis. Robert C. Dertano, director.

KEYWEST STUDIOS

● WALTER STRENGE, ASC, Family Films, "This is the Life," TV. William Claxton, director.

KLING STUDIOS

● RAY FOSTER, ASC, Rath TV commercial. Bob Larson, director.

KTTV

● STUART THOMPSON, ASC, "Lassie,' TV, (Robert Maxwell Prods.) with Jan Clayton and George Cleveland. Les Selander, director.

● KENNETH PEACH, ASC, "Fury," TV, with Peter Graves and William Fawcett. Sidney Salkow, director.

METRO-GOLDWYN-MAYER

● ROBERT SURTEES, ASC, "Raintree County," (65mm and Color) with Montgomery Clift and Elizabeth Taylor. Edward Dmytryk, director.

● JOHN ALTON, "Teahouse of the August Moon," (Color; CinemaScope) with Marlan Brando and Glenn Ford. Daniel Mann, director.

● RUSSELL HARLAN, ASC, "Something of Value," shooting in Africa, with Rock Hudson and Dana Wynter. Richard Brooks, director.

● PAUL VOGEL, ASC, "The Wings of Eagles," with John Wayne, Dan Dailey and Maureen O'Hara. John Ford, director.

● F. A. YOUNG, ASC, "The Little Hut," CinemaScope and Color, with Ava Gardner and Stewart Granger. Mark Robson, director.

● HAROLD MARZORATI, ASC, "Slander," with Van Johnson and Ann Blyth. Roy Rowland, director.

● JOSEPH RUTTENBERG, ASC, "The Vintage," (CinemaScope & Color, shooting in France) with Mel Ferrer and Pier Angeli. Jeffrey Hayden, director.

MIKARO STUDIO (New York)

● MORRIS HARTZBAND, "Rock, Rock, Rock," (Vanguard Prod.). Will Price, director.

MOTION PICTURE CENTER

● HAROLD WELLMAN, ASC, "Wyatt Earp," TV, (Desilu Prods.) with Hugh O'Brien. Frank McDonald, director.

PARAMOUNT

● SAM LEAVITT, ASC, "Flamenco," (VistaVision and Color) (Being photographed in Spain) with Carmen Sevilla and Richard Kiley. Don Siegel, director.

● CHARLES LANG, ASC, "The Rainmaker," with Burt Lancaster and Katharine Hepburn. Joseph Anthony, director.

● LOYAL GRIGGS, ASC, "The Buster Keaton Story," (VistaVision & Technicolor) with Donald O'Connor and Ann Blyth. Sidney Sheldon, director.

● HASKELL B. BOGGS, "The Jim Piersall Story," with Karl Malden and Norma Moore. Robert Mulligan, director.

● JACK WARREN, ASC, "Beau James," VistaVision and Color, with Bob Hope and Vera Miles. Mel Shavelson, director.

REPUBLIC STUDIOS

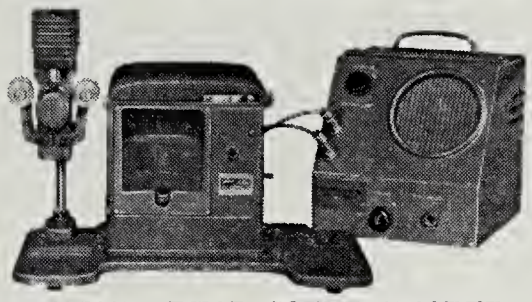
● ED COLMAN, ASC, "Dragnet," TV, (Sherry Prods.) with Jack Webb. Jack Webb, director.

● JOHN MACBURNIE, ASC, "The Jane Wyman Show," TV. Don Weis, director; "Soldier of Fortune," TV, Revue Prods., Richard Irving, director.

(Continued on Page 532)

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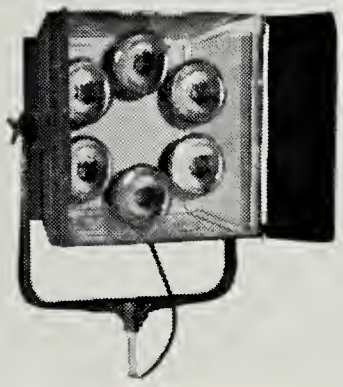
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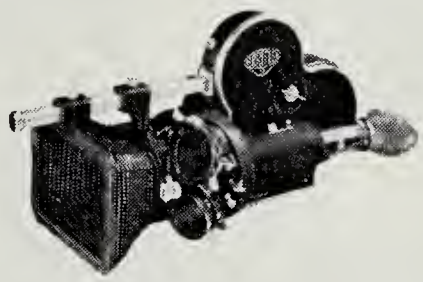


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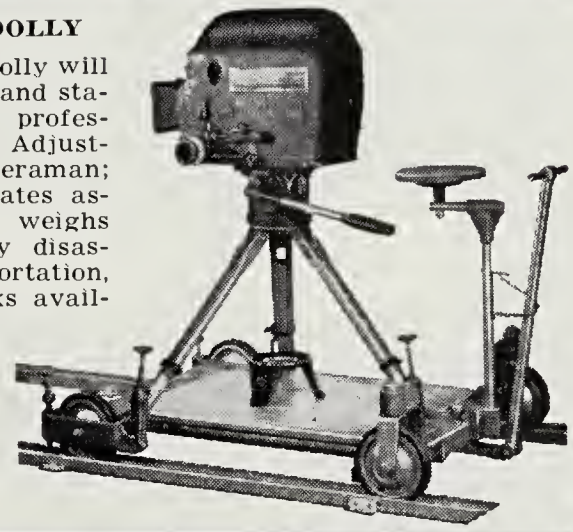


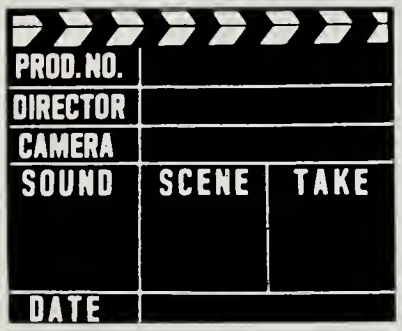
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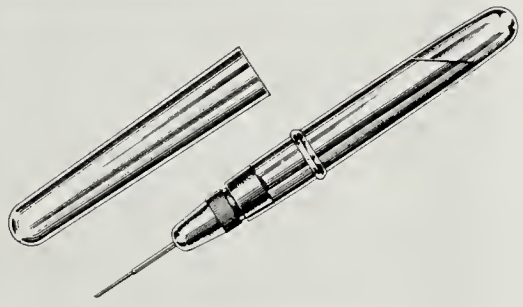
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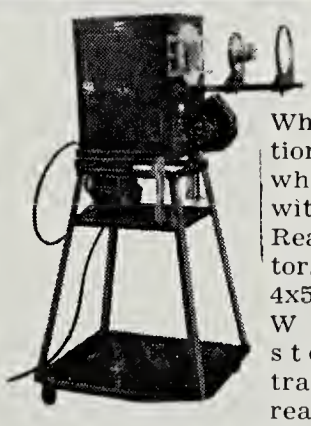
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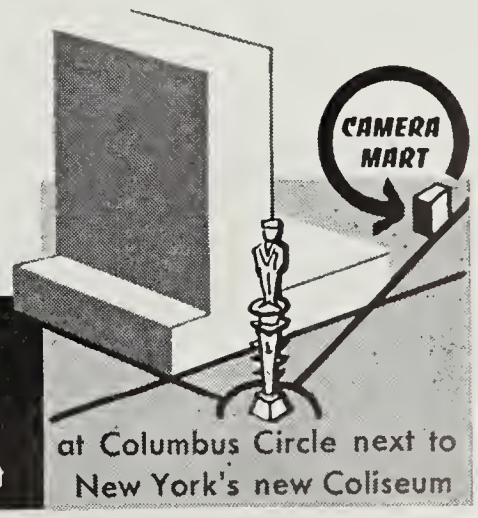


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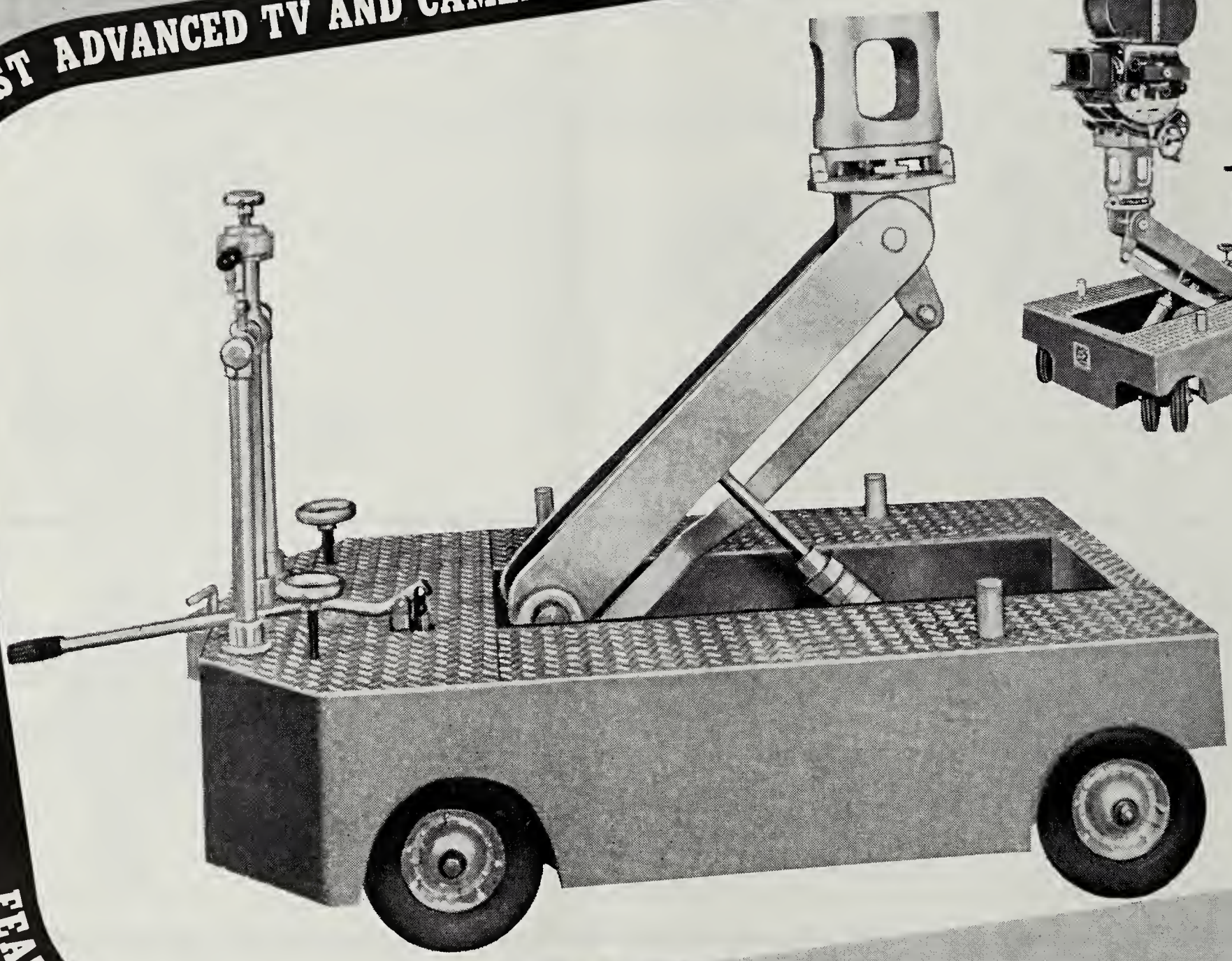
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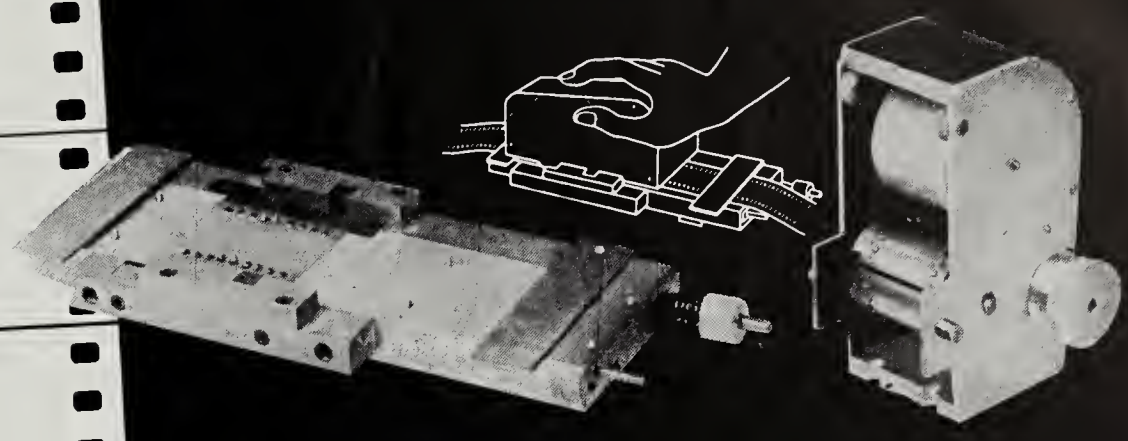
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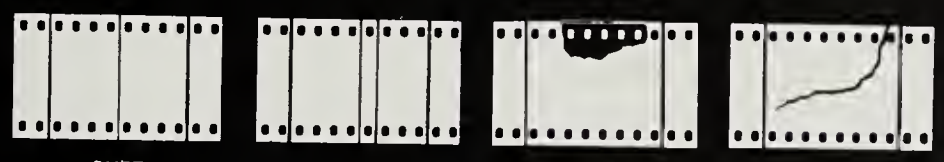
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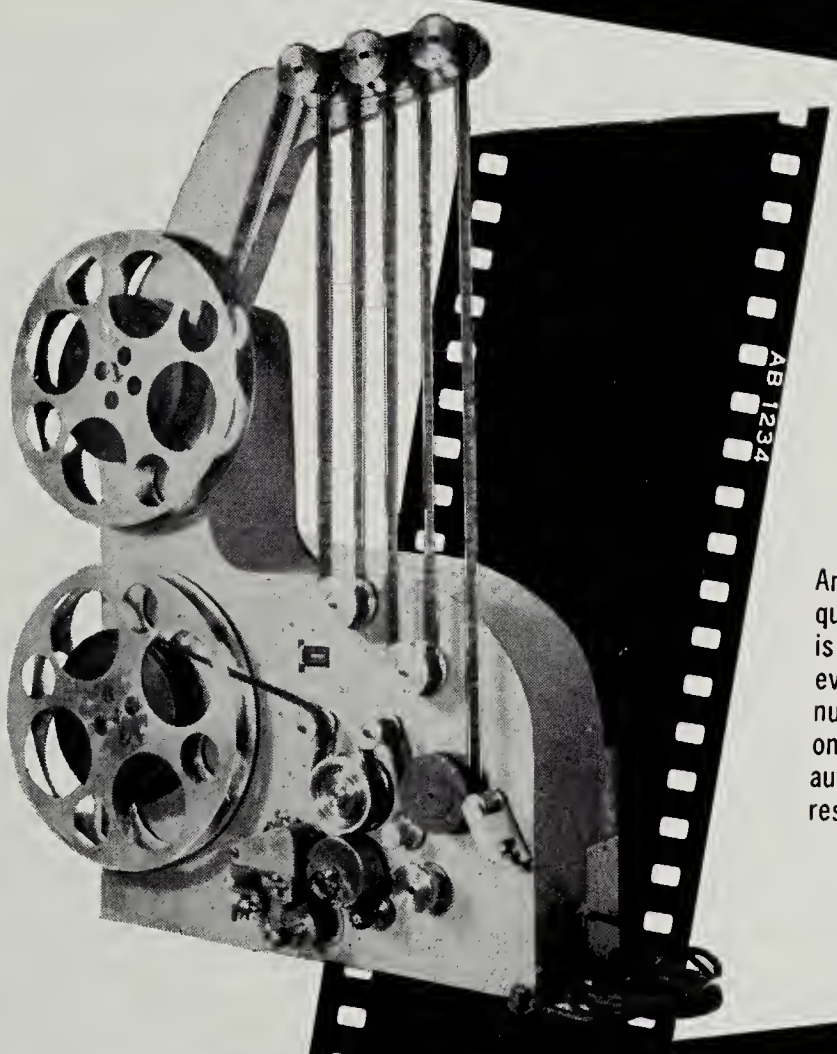


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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 528)

REPUBLIC STUDIOS

● REGGIE LANNING, "G.E. Theatre," TV. Revue Prods. James Nilsen, director; "Alfred Hitchcock Presents," TV. James Nilsen, director.

● HERB KIRKPATRICK, "GE Theatre," TV. Hershel Daugherty, director.

● JACK MARTA, "Affair In Reno," with John Lund and Doris Singleton. R. G. Springsteen, director; "Duel At Apache Well," (Widescreen) with Anna Maria Alberghetti and Ben Cooper. Joe Kane, director.

HAL ROACH STUDIOS

● JACK MACKENZIE, ASC, "Code 3," TV. Various directors.

● EDWARD FITZGERALD, ASC, "The Charlie Farrell Show," TV, with Charles Farrell. Ralph Murphy, director.

● PAUL IVANO, "Stories of John Nesbitt," TV, with John Nesbitt. Various directors.

● LOTHROP WORTH, ASC, "The Gale Storm Show," TV, with Gale Storm and ZaSu Pitts. Various directors.

RKO

● WILLIAM SNYDER, ASC, "Bundle of Joy," (Eastman color; wide-screen) with Eddie Fisher and Debbie Reynolds. Norman Taurog, director.

● WILLIAM SKALL, ASC, "The Day They Gave Babies Away," (Eastman Color; Widescreen) with Glynis Johns and Cameron Mitchell. Allen Reisner, director.

● ROBERT PLANCK, ASC, "The Young Stranger," with James MacArthur and Kim Hunter. John Frankenheimer, director.

● LUCIEN BALLARD, ASC, "I Married a Woman," with George Gobel and Diana Dors. Hal Kanter, director.

● MOE HARTZBAND, "Brave Tomorrow," Galahad Prod., shooting in N.Y., with John Beal and Augusta Dabney. John Newland, director.

RKO PATHE

● GUY ROE, ASC, "Hey Jeannie," (Jeannie Prods.) TV, with Jeannie Carson and Allen Jenkins. Les Goodwin, director; Zane Grey Theatre, TV. Various directors; Stage 7, TV. Frank Bauer, director.

20TH CENTURY FOX

● JACK HILDYARD, "Anastasia," (Deluxe color; CinemaScope) (shooting in London) with Ingrid Bergman and Yul Brynner. Anatole Litvak, director.

● JOE BIROC, ASC, "Black Whip," (Regal Films; CinemaScope) with Hugh Marlowe and Coleen Gray. Charles M. Warren, director.

● OSSIE MORRIS, "Heaven Knows Mr. Allison," with Deborah Kerr and Robert Mitchum. John Huston, director.

● LEO TOVER, ASC, "The Reno Brothers," (CinemaScope & Color) with Richard Egan and Debra Paget. Robert Webb, director.

● HARRY NEUMANN, ASC, "The Women of Pitcairn Island," (20th Century-Fox release, CinemaScope) with James Craig, John Smith and Lynn Bari. Jean Yarbrough, director.

UNIVERSAL - INTERNATIONAL

● WILLIAM DANIELS, ASC, "Interlude," (CinemaScope - Technicolor) (shooting in Munich) with John Allyson and Rossano Brazzi. Douglas Kirk, director.

● MAURY GERTSMAN, ASC, DuPont commercial, TV. Wil Cowan, director; Lava Soap Commercial, TV. Jack Daniels, director. "The World and Little Willie," (Technicolor) with Maureen O'Hara and John Forsythe. Jerry Hopper, director.

● CARL GUTHRIE, ASC, "Quantez," Technicolor and CinemaScope, with Fred MacMurray and Dorothy Malone. Harry Keller, director.

● IRVING GLASSBERG, ASC, "Joe Butterfly," CinemaScope and Technicolor, with Audie Murphy and George Nader. Jesse Hibbs, director.

● RUSSELL METTY, ASC, "The Eyes of Father Tomasino," CinemaScope, with Tony Curtis, Marisa Pavan and Gilbert Roland. Joseph Pevney, director.

● ELLIS CARTER, ASC, "The Deadly Mantis," with Craig Stevens and Alix Talton. Nathan Juran, director.

● CHARLES WELBORN, Prell commercial, TV; Ford commercial; RCA commercial, TV. Jack Daniels, director.

● ARTHUR FEINDEL, ASC, De-Soto TV commercial. Will Cowan, director.

● WALTER STRENGE, ASC, Campbell Soup commercial, TV. Jerry Schneitzer, director.

● CLARK RAMSEY, ASC, DuPont Centennial, TV. John Sheridan, director.

● CARL GUTHRIE, ASC, "The Tattered Dress," (CinemaScope) with Jeff Chandler and Jeanne Crain. Jack Arnold, director.

● GEORGE ROBINSON, ASC, "The Night Runner," with Ray Danton and Colleen Miller. Abner Biberman, director.

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● JOHN SEITZ, ASC, "Buffalo Grass," (WarnerColor) with Alan Ladd and Virginia Mayo. Gordon Douglas, director.

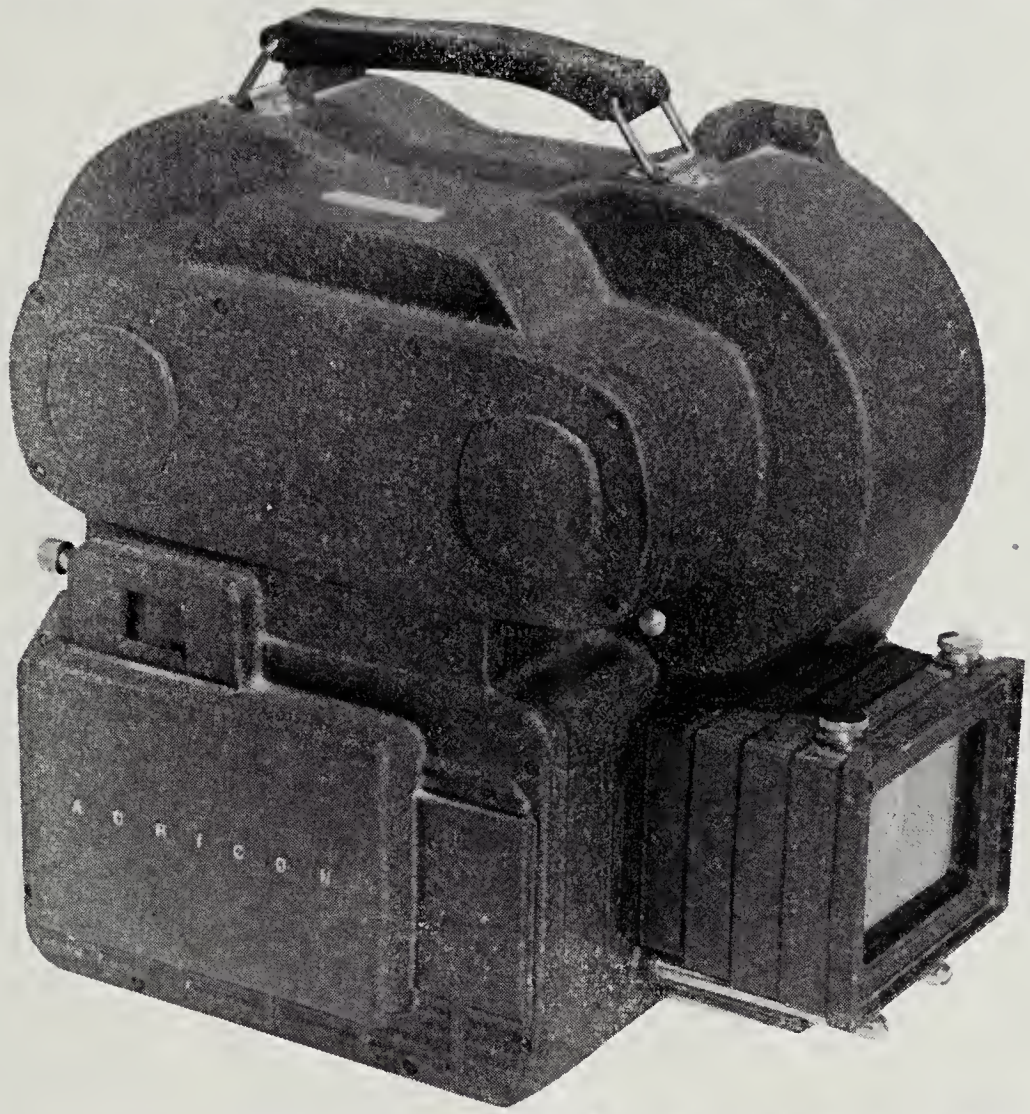
● HAROLD STINE, ASC, "Shock Wave," Warner Bros. Presents, TV, with Scott Brady. James Kein, director; "Cheyenne," Warner Bros. Presents, TV, with Clint Walker. Walter Doniger, director.

● HAROLD ROSSON, ASC, "Conflict," Warner Bros. Presents, TV, with Harry Seymour. Frederick De Cordova, director.

● JACK CARDIFF, "The Sleeping Prince," (LOP Production shooting in London) with Marilyn Monroe and Laurence Olivier. Laurence Olivier, producer-director.

● HARRY STRADLING, ASC, & GAYNE RESCHER, ASC, "A Face In The Crowd," (Newton Prod. shooting in Arkansas) with Andy Griffith and Patricia Neal. Eliz Kazan, producer-director.

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RIGHT camera angle gave added dramatic impact to this scene of giant whale about to crush boat and seaman between its powerful jaws, as seaman fights monster with harpoon.



OZZIE MORRIS, left, who directed the photography of "Moby Dick," uses Mitchell camera finder to show director John Huston tentative camera angle for shot about to be made aboard whaler.

'Moby Dick' Sets New Style In Color Photography

Initial photography was on Eastman color negative. Afterward, two different master negatives were made—one in color and the other in black-and-white—and printed together to produce somber color tones.

By DEREK HILL

WHEN DIRECTOR John Huston and director of photography Ozzie Morris began discussing plans for the color treatment of "Moby Dick," they agreed that an orthodox modern style would be at odds with the film's period, mood and subject matter.

"What we wanted," Morris told me, "was something which suggested that this is how the film would have been shot if it could have been made in 1840—a classic color style to match a classic original."

With this idea in mind Morris visited Newhaven, a harbor town on Britain's south-east coast, and shot a series of 4″x5″ stills. Scenes varied from general seascapes and fishing scenes to facial close-ups, but all shared the type of background to be used in the film.

"I shot these stills in dull weather, in weak sunlight and in strong sunlight," Morris explained. "Then the darkroom juggled until they got the effect I was after."

Morris took his pictures to Technicolor to show them exactly what he wanted. But the problems of reproducing his effects on the tiny picture area of 35mm film proved so difficult that Technicolor's treatment of his early film tests left him dissatisfied. Indeed, when first unit shooting was due to be-

gin, Morris was still uncertain whether the style he was attempting could be accomplished by the laboratory.

He asked Huston whether they should take a chance or fall back on conventional color work. Huston, to his delight, agreed on the gamble. But Morris was halfway through the six months of shooting before Technicolor produced results which confirmed that his original still effects could be recreated on movie film.

"We were getting pretty desperate," he confessed. "I was just beginning to wish the earth would swallow me up. But when I saw those results, I knew at once the labs could treat the whole lot that way. It was a case of all or nothing."

Morris emphasizes that the major factor in the particular style evolved for "Moby Dick" is that the cameraman must have control over all color. He worked with the closest possible cooperation of costume designer Elizabeth Haffenden and art director Ralph Brinton—and, of course, producer-director Huston himself.

"Every detail of color was planned to the nth degree," he said. "I didn't want bright colors. There's hardly a woman in the film, and there's no love interest. It's a man's picture and I wanted masculine colors.

"Nature was the principal enemy; it was the only thing we couldn't control. We found we had to kill blues. Then again much of our seascape shooting was limited by our horizons, and inevitably the sky we wanted always seemed to be in the wrong direction."

Morris and Huston felt from the beginning that the picture required a special photographic treatment because of its mood, its locale, and the period when the action in the film took place. They were faced with three major problems: First, to capture the proper atmosphere, a delicate blend of realism and fantasy was needed. Second, as the

(Continued on Page 555)



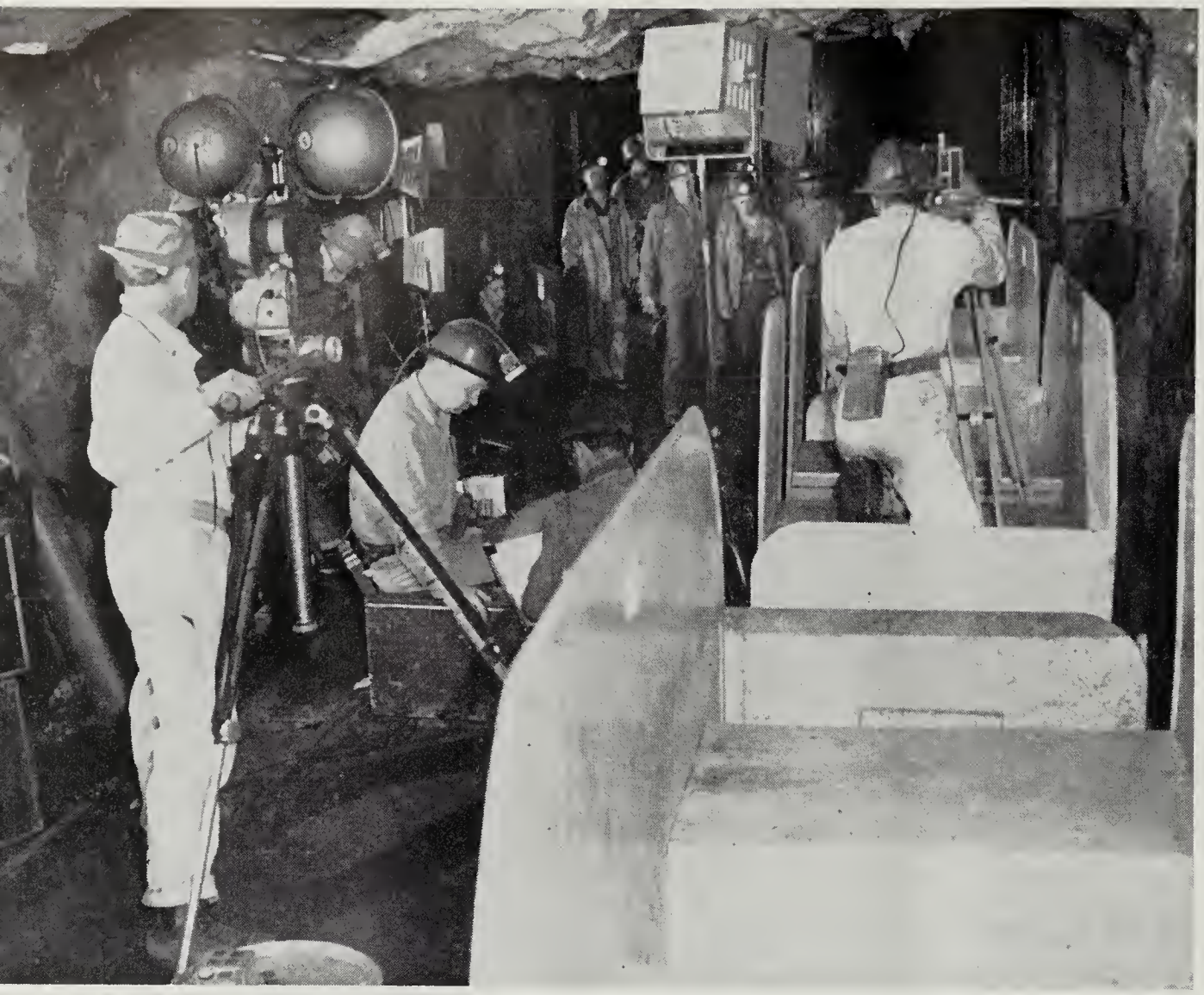
CAMERA CREW of "Moby Dick" focuses Mitchell camera for a closeup of Gregory Peck, who plays Ahab. Nearly all the picture was shot in Ireland.



CARPENTERS put false fronts on buildings in Youghal, Ireland, as they convert the village to resemble New Bedford, Mass. in the last century for scenes in Warner Brothers' "Moby Dick."



FOR ACTION SCENES of longboats in action, camera was mounted on metal platform extendnig from bow of boat.



"ON LOCATION" 3500 feet below earth surface in the Homestake mine, crew of Forney Films, Inc., awaits signal to start the cameras rolling. Set up and ready to go into action is the producer's Auricon-Pro sound camera and a Cine-Special.

SHOOTING COLOR FILM A MILE UNDERGROUND

Documenting gold mining operations in color and sound proved real challenge for crew of Forney Films, Inc., Colorado industrial film producers.

By DEAN FAULKNER

Lighting Consultant, Forney Films, Inc.

When Forney Films, Inc., was engaged by the Homestake Gold Mine to produce two 16mm color films of the company's mine operations, all we knew about shooting color underground was that it was probably pretty dark down there!

The saga of this interesting assignment began last fall when officials of the mine, located in Lead, South Dakota, began discussions about the proposed productions with our offices in Fort Collins, Colorado. The mining company had decided to replace two of its old films with new productions in color and sound. One was to be a 30-minute, institutional-type film intended for general showing throughout the state for the purpose of acquainting citizens with certain economic problems facing South Dakota's gold mining industry, and at the same time point up the relationship between the prosperity of Homestake and the economic well-being of the state in general. The second was to be a training film for new mine employees.

We proposed that both films be shot in color, and in order to prove to the Homestake officials that shooting color in the underground darkness of a mine was not only feasible but productive of more compelling results, a 100-foot 16mm Kodachrome test was shot and screened for the clients. This demonstration settled the matter and plans were begun for commencing the productions in April, 1956.

The ensuing weeks were spent in preparing scripts. Substantial economies were effected by planning to shoot certain footage for both productions at the same time—that is, where essentially the same locations and action were called for in both films. In this way we would avoid the expense and time delays of having to return to locations a second time.

A "scramble" sheet was prepared listing the location breakdown of each scene and indicating where duplicate shots were to be made, etc. This saved many hours of shooting time during production on locations and simplified the moving of equipment.

Shooting on the productions began April 16th. Our production staff included Max Howe, chief cinematographer (he's also president of Forney Films, Inc.); Jerry Tunnell, sound engineer; Dean Faulkner, lighting consultant; Don Howe, liaison man who doubled as script clerk; Langan Swent, film director underground and technical advisor for the Mine Department; and Ray Gallo, Elmer Holson, and Dale Grove—electricians furnished by the mine.

Our lighting equipment for this assignment included two Master Colortran Converters and one Senior Colortran Converter, which provided a total of 15 kilowatts of illumination; three Senior Colortran Flood Kits, one Dual Colortran Spotlight, four No. 4 daylight-type photofloods (which we used to advantage to impart a blue tone to the rock walls underground), a barrel of No. 2 photofloods, an assortment of cables and extension cords, a master power switchboard with an auto-transformer that provided two circuits of 60-amps each for lighting and controlled voltages for operation of the cameras and sound equipment, and one medium power board.

Camera equipment included two Cine Specials, an Auricon-Pro sound camera,

three tripods, two Norwood Director exposure meters, and the following lenses: f/1.4 25mm Ektar with a 15mm converter, f/2.0 63mm Ektar, f/2.7 102mm Ektanon, B&H Angenieux f/0.95 25mm, a Zoomar with a range from 1 to 3 inches focal length, and a f/2.8 15mm KP Yvar.

If anyone had tried to describe to our crew the conditions and problems they would encounter in the mine, they likely wouldn't have believed them. As, for example, a situation like this:

An underground "room" that is six feet high or less. There is no floor, only sharp, jagged rock blasted down and piled at random. Temperature is an uncomfortable 85 degrees and the humidity is the same. The only air there is to breathe is that which comes from the surface under forced draft through a large rubber tube a foot in diameter. Water is dripping incessantly from the ceiling, and running down the light cables. The fine rock dust seems to creep into everything. A cameraman would think twice before opening his camera under such conditions! CC filters cling to the lens mounts like Jello that hasn't quite jelled, and the film in the cameras almost turns into warm spaghetti.

A hard-hat is "must" head covering because loose rocks are continually falling from above. The only light is that furnished by the tiny battery-powered lamp attached to the hard-hat. Hard-toed rubber boots are standard footgear; water is everywhere and stands six inches deep in level areas, so the boots keep the feet dry and at the same time offer protection against toe-crushing boulders and loose rock.

Thus it was that Forney Films' crew begun production on that unforgettable April day. Perhaps the most striking thing they encountered was the endless drab, gray color that was everywhere. The rock is dark gray—the good Homestake mother lode—and the miners offered no contrast because they were gray, too—their clothing and even their faces, which was covered with the gray dust. Here, for color relief, some of the machines were painted yellow, and judicious use of the blue photofloods enabled us to impart still more color to the otherwise drab underground scenes.



CEILING HEIGHTS in the mine ranged from a few feet to six feet and there often was not enough room to shoot with camera on tripod, so the dependable and lightweight Cine Special was used in situations such as this.

The first day, we shot about 300 feet of 16mm Commercial Kodachrome—making three or four takes on each scene. The usual pattern was to shoot wide, cut and move in with the Cine Specials, then cover with the Auricon. A week was spent in the largest of the underground rooms or "stopes," as miners call them, filming scenes and recording "wild sound" of such activities as drilling, blasting, grinding and crushing of ore, etc.

Each night, after shooting was terminated, cameras and film were brought to the surface; the cameras were cleaned and serviced and the film was packaged for shipment to the laboratory.

One important sequence was filmed here that showed Homestake's safety engineer, Phil Graves, escorting a new employee around the mine and pointing out the various hazards he might encounter while working there. To record this action in detail, the cameras, lights, cables and power board had to be lowered or pulled up by cable through a hole (a "raise" in mining language) about ten feet in diameter in the rocky structure. This hole extended from the floor of the stope straight up 140 feet to the next mine level. Passage was by means of a narrow iron ladder. At this dizzy height, the required scenes were shot and our equipment lowered to the stope below. Total set-up time was 4 hours; total shooting time, 4 minutes; total footage edited into the picture, 10 seconds!

Recording sound in this location was also an unusual undertaking and fraught with many problems. Soundman Jerry Tunnell used an Ampex 600 synchronous recorder to record "wild" sound tracks for subsequent dubbing or to background narration. Drilling sounds were picked up without much trouble; but blasting presented the major problem. Pick-ups were tried close to the blasts, through-the-rock blasts and distant blasts; but the terrific concussion

(Continued on Page 566)



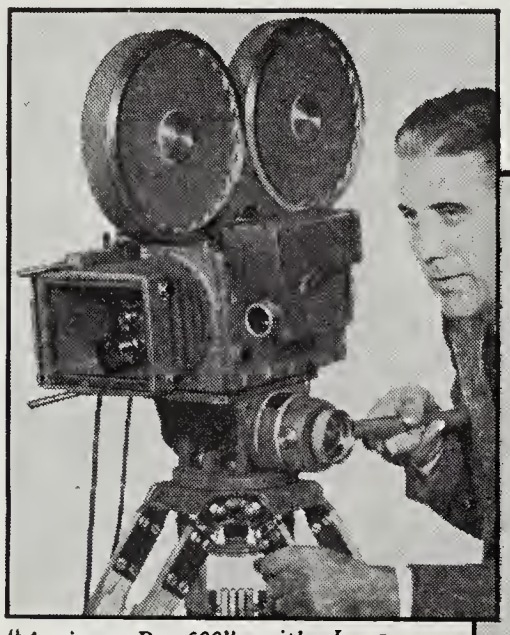
FORNEY FILMS' crew spent a week in the largest of the underground "rooms" or stopes, as miners call them, filming scenes and recording "wild sound" of such activities as drilling, blasting, grinding and crushing of ore, etc.

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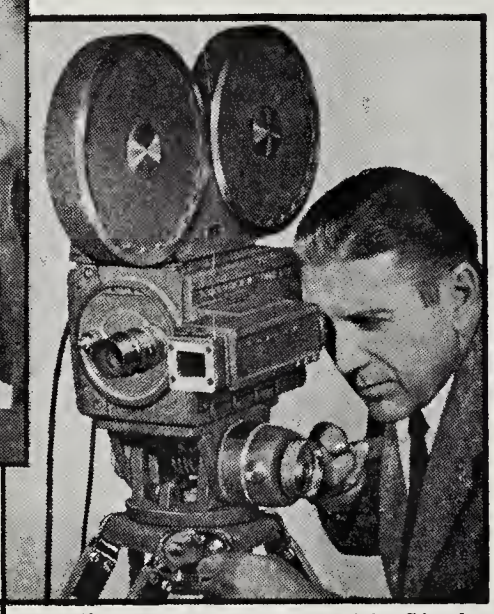
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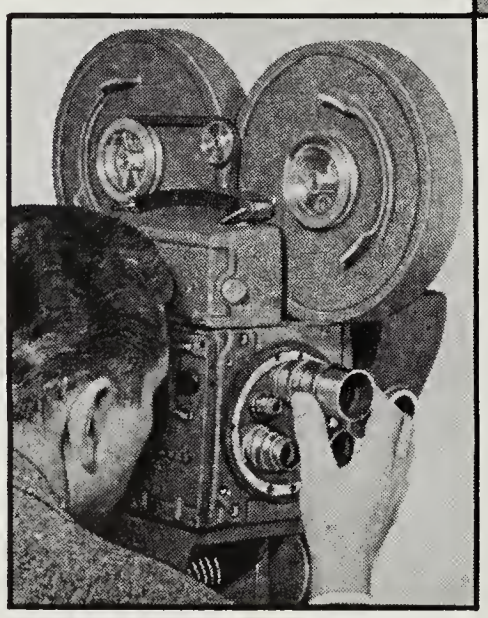


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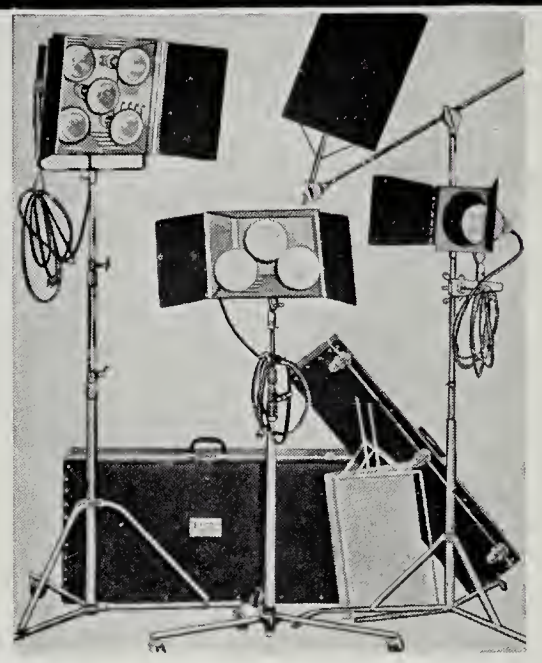
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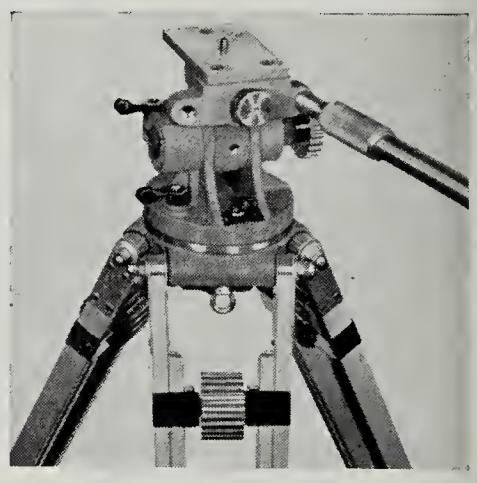
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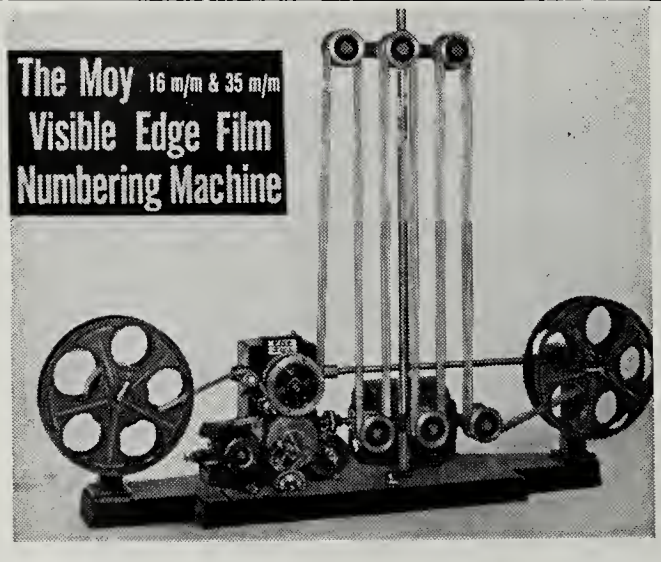


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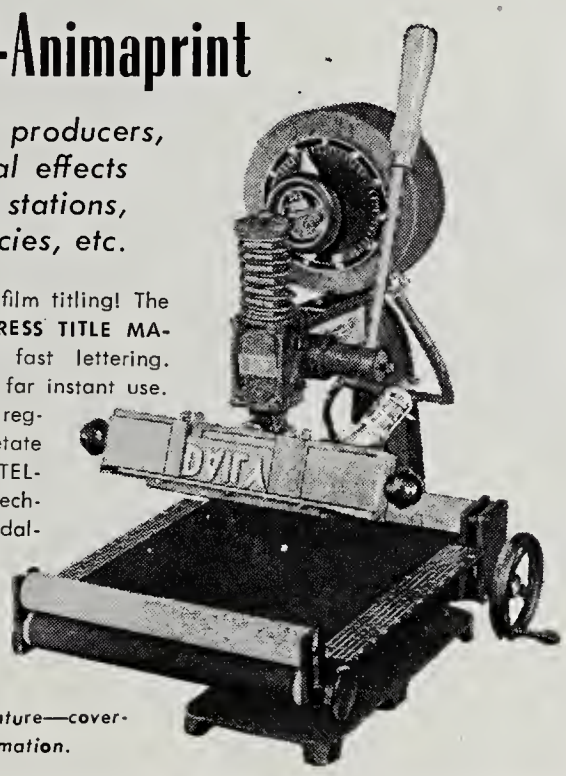
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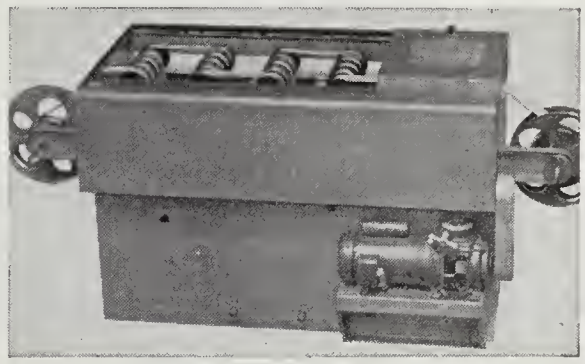
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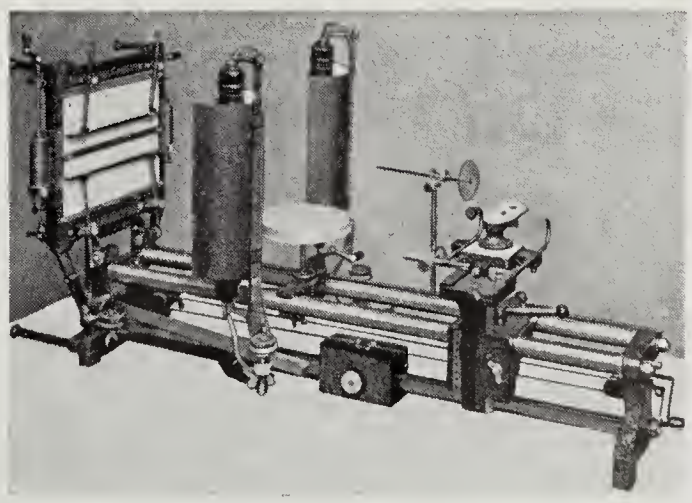
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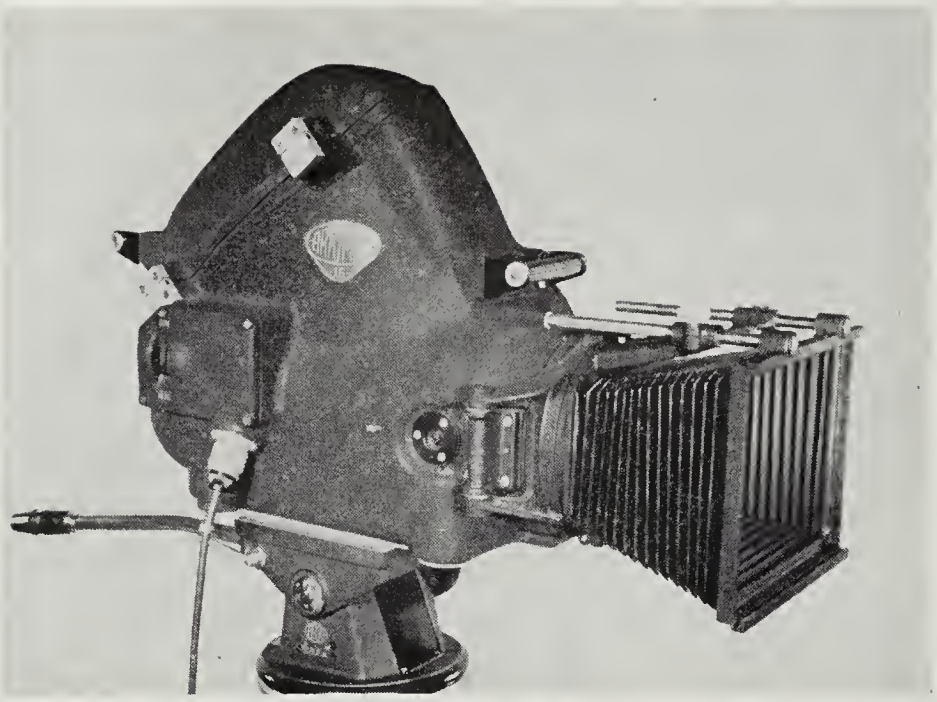
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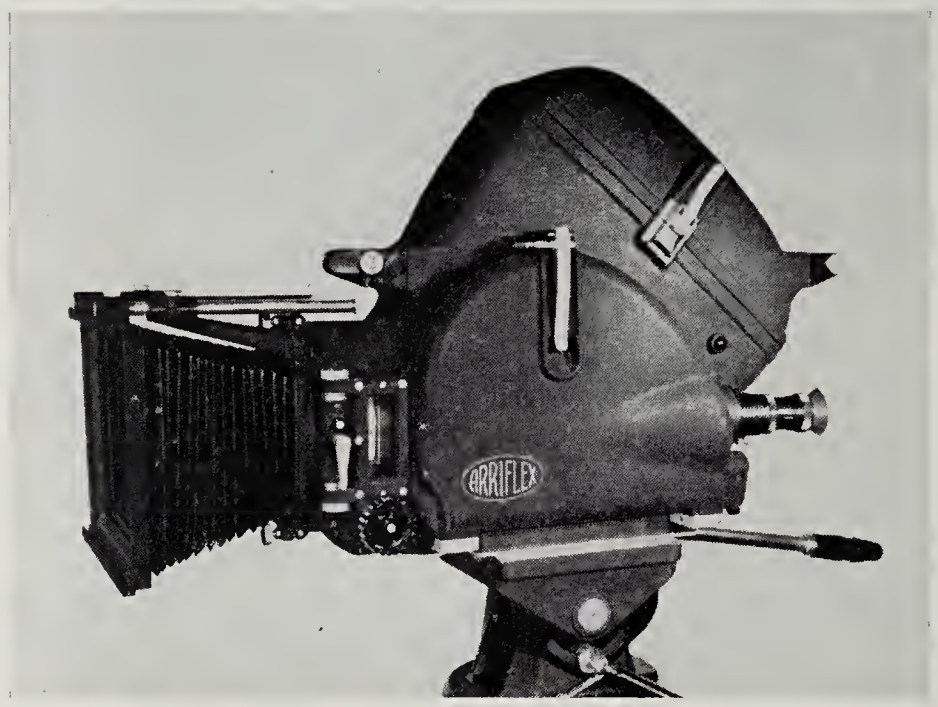


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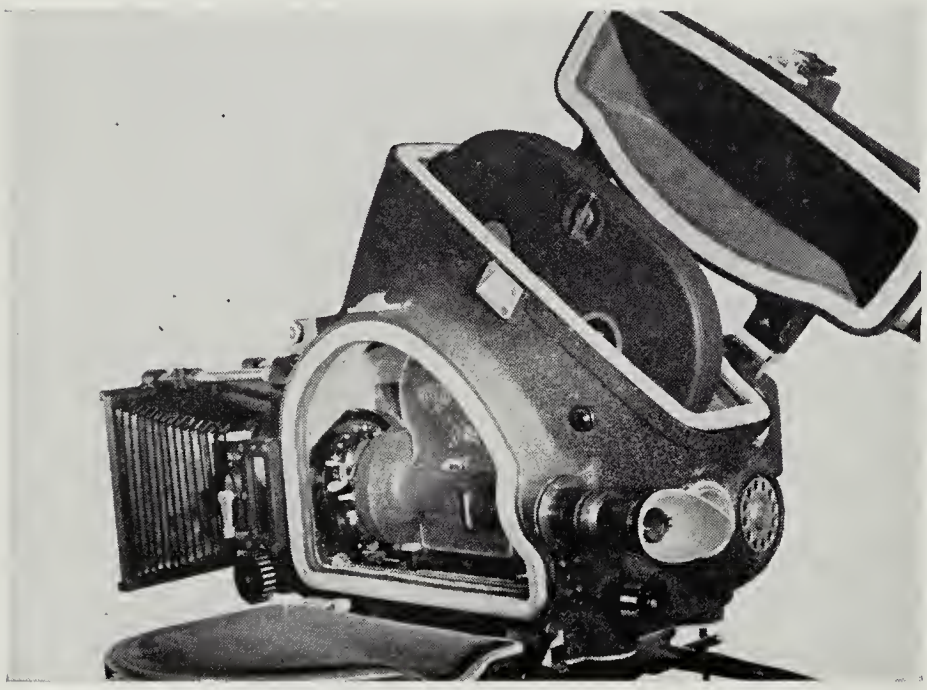
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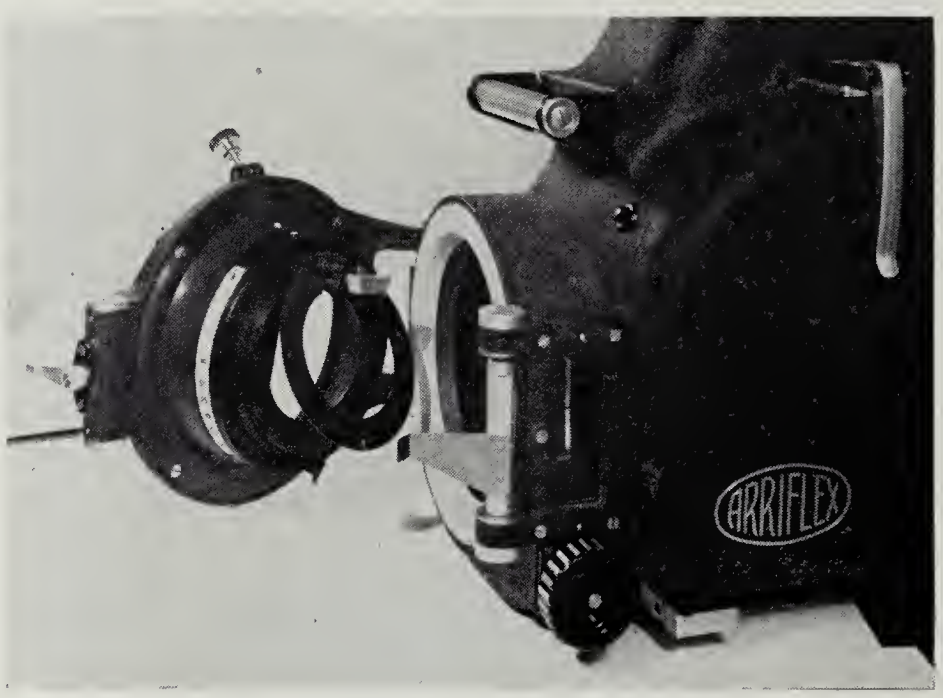
VIEW of blimp from right side, showing cable connection and ON-OFF switch, also unique overhead mounting of matte box slidebars.



FOLLOW-FOCUS control knob and port for observing focus scale may be seen in lower center of left hand side of the Arri 16 blimp.



TWO of blimp's three doors are open here to show means of mounting magazine (top) and inserting camera through side door.



OPENING front door gives access to lenses and turret and permits marking focusing scale or inserting 3″ square filters in holder.

New Blimp For Arriflex 16

Incorporating latest soundproofing techniques, Arri 16 blimp converts the Arriflex camera for full-scale sound film production.

THE ARRIFLEX 16mm camera, which was initially designed to be the basis of an integrated professional motion picture camera system, achieves this goal with the addition of the new Arri 16 Blimp. With the blimp, the Arriflex 16 can be converted from a light, portable hand-camera, to an efficient camera for sound stage production of films.

The blimp has been engineered according to the most recent developments in acoustical science. The external housing is aluminum alloy and precision machined. The basic sound absorbing construction begins with sheet lead and goat skin in alternate layers, and this is covered with a top lining of grey corduroy.

Three separate doors are provided for easy access to the interior and the camera. One, on top, facilitates easy mounting and demounting of the 400-foot magazines. An extra large door on the left side is for inserting and mounting the camera. This door is also used when threading film in the camera after mounting a new magazine. The third door, in front, gives access to lenses and turret and permits operator to mark the focusing scale or to mount 3″ square glass filters in the holder built into the door. Heavy rubber gaskets around all closures eliminate sound leaks.

The camera is mounted within the blimp on a floating base, which is sup-

(Continued on Page (568)

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Eastman Plus-X Panchromatic Negative Film (Type B)

Cameramen accustomed to the older Plus-X film need make no changes in the general lighting or exposure levels when using this new Eastman negative film.

By EMERY HUSE

On February 20, 1956, at a regular monthly meeting of the American Society of Cinematographers, the writer presented a short paper, with substantiating film evidence, dealing with the photographic characteristics of the new Plux-X Panchromatic Negative Film, Type B, which was to be available to the trade several months later.

This film is now available and in production use in limited quantities. The new film, carrying the same name as its predecessor, Eastman Plus-X Panchromatic Negative Film, can be differentiated from the older film by the use of the term "Type B", which is enclosed in parentheses after the name, and by the change of the film code number from 5231, the number of the old type, to 4231.

This new film is not merely an improvement in the old product; it is an entirely new film incorporating the latest advances in emulsion and support manufacturing techniques. It is a high speed, fine grain negative material, well suited to general photography, as well as to exterior photography under normal or poor lighting conditions. The film represents an excellent balance between the maximum desirable speed for most purposes and the finest grain available at that speed. This new film is of approximately the same speed as the well-know Eastman Plus-X Panchromatic Negative Film, Type 5231. It can be widely used for general production work and is suitable for making composite projection background scenes, since its speed is sufficient to permit the use of small aperture in order to secure depth of field. Cameramen who are accustomed to the older Plus-X film need make no changes in their general lighting or exposure levels when using the new film.

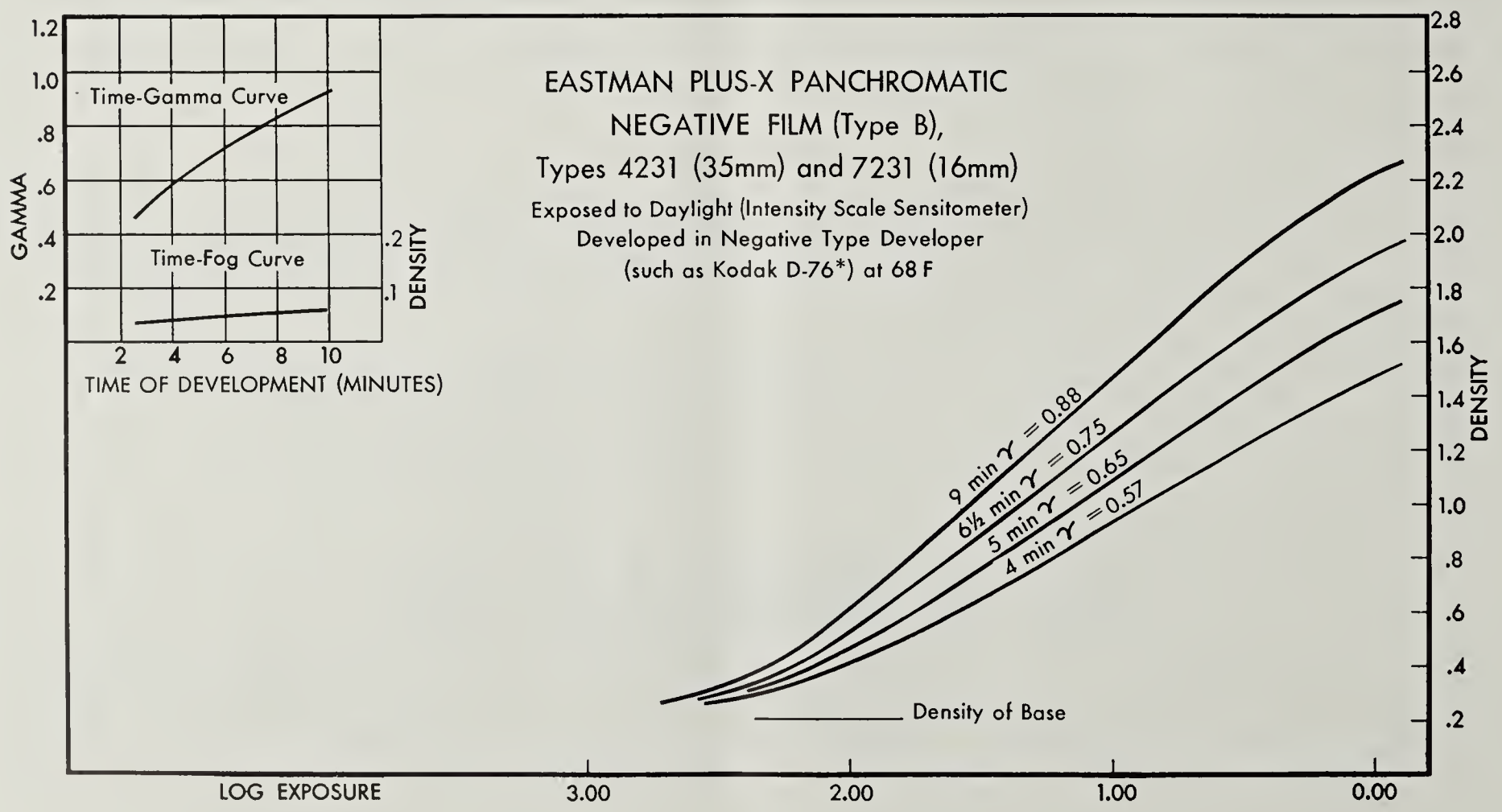
Since the type 4231 film has a much lower granularity than the type 5231, the graininess observed in a projected print therefrom is thus greatly reduced. In addition, the acutance, the factor which expresses the ability of a film to produce sharp images, is much higher than that of the older film. These properties, graininess and acutance, assume greater importance since the adoption of wide-screen processes by the industry.

The tone reproduction characteristics of the new film are excellent. In combination with Eastman Fine Grain Release Positive Film, Type 5302, sparkling highlights and good blacks are obtained, together with a very pleasing gradation of well-spaced intermediate tones. With the improved granularity and sharpness of the type 4231, the layman can readily observe the remarkable difference between the old Plus-X Negative and the new type.

This new type 4231 film has panchromatic sensitizing which is slightly different than that of type 5231. It is more nearly like that of Eastman Tri-X Panchromatic Negative Film, Type 5233, which in itself was slightly different than the regular Plus-X Negative, Type 5231. In a tabulation which will apear at the end of this article, spectograms, filter factors, developing rates, and other pertinent factors will be presented, such as will be available later in standard data-sheet form.

As is the case with the older type

(Continued on Page 562)



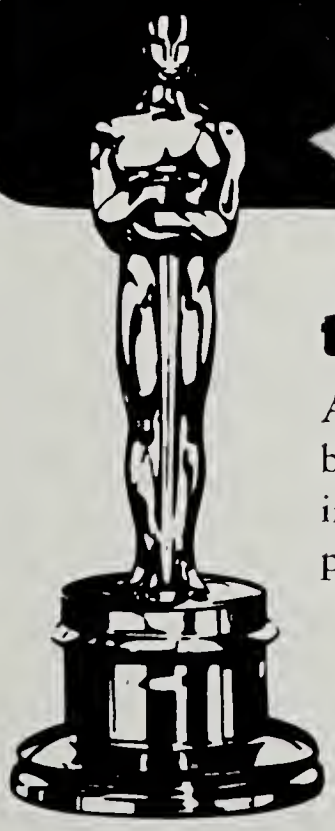
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the result

Academy Award, 1954, for
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in Columbia's award-winning
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ON LOCATION in Portugal, some of cast and crew of Republic's "Lisbon" await signal to roll the camera on a garden exterior. Jack Marta, in hat and top coat, directed the photography. Nearby are Ray Milland and Maureen O'Hara, stars of the production.

Shooting "Lisbon" In Portugal

Vast location interiors were just one of the challenging photographic problems encountered by cinematographer Jack Marta in shooting Republic's second Naturama production.

By ARTHUR ROWAN

MOTION PICTURE COMPANIES have traveled millions of miles to every corner of the world seeking authentic locales for films, but Republic Studios is the first company to produce a feature-length production in Portugal. This untapped reservoir of ancient and romantic legend and picturesque background was captured by Republic cameras for the first time for "Lisbon," which stars Ray Milland, Maureen O'Hara, Claude Rains and Yvonne Furneaux. Directing the photography was Republic's veteran cinematographer, Jack Marta.

In order to obtain the full color and historic impact of the old European seacoast town as essential background to the basic story of international intrigue, Republic Studios decided that "Lisbon" would be filmed in Naturama, the company's new wide-screen process, and in Trucolor.

The story of "Lisbon" is ideally suited to the locale. The twenty-five million dollar fortune of an elderly American industrialist (Percy Marmont), captured by the Reds and held incommunicado for two years, becomes the focus of a tense love and murder melodrama, staged in present-day Lisbon, in which a dashing Boston-born sea captain (Ray Milland) defeats a cold-blooded murder plot contrived by the industrialist's beautiful but mercenary young wife (Maureen O'Hara) and a clever, sadistic, international crook (Claude Rains).

It was Christmas in Portugal for the cast and crew, which was flown out of Hollywood to Lisbon early last December. They discovered they were virtual pioneers on the scene in the matter of making motion pictures. There was no native technical help nor any motion picture equipment available since no major picture had ever been made in the area.

Fortunately, all camera equipment had been shipped from Hollywood, with the expectation that the necessary lighting equipment would be available through Tobis Portuguesa, the lone motion picture studio in Lisbon which was built by the Germans before the war.

In this studio, which the "Lisbon" company used as its headquarters during its three-month stay, many of the picture's interiors were built. To light these large sets, the company sent to Hamburg, Germany, for a lighting generator—a British-built 2700 amp affair, said to be the largest in the world and requiring a crew of three to operate it. A 22-wheel truck brought it over the mountains on hazardous roads to deliver it at "Lisbon" headquarters.

The Portugal movie studio possessed some very old set lighting equipment—outmoded and almost useless. The wiring and the cables were in such poor condition, the best the company could do was light a Junior with them. All stage wiring was from overhead—a German idea —with cables and junction boxes coming down from the rafters.

"When we first put this antiquated equipment into use," said cinematographer Marta, "the dangling cables writhed and vibrated and became overheated from the current load placed on them."

The big mobile generator became the power house for all set lighting at the studio. But a great deal of the picture was also shot on natural locations—in cathedral, old castles, and in homes of prominent people. Here the company encountered one of its greatest problems—getting the huge, 8-wheel generator through Lisbon's narrow streets. Each time the company wished to move it, it was necessary to engage a cordon of police as escort. In several instances, moving the generator to a desired location had to be abandoned and use of domestic current resorted to for lighting interiors. Here the old reliable photoflood lamps saved the day for Marta—except that obtaining them only added to his many problems. The lamps had to be shipped from New York by air — a minor problem in itself. It was after they arrived in Portugal that the problem became intensified through the interminable delays in getting the shipment cleared through customs.

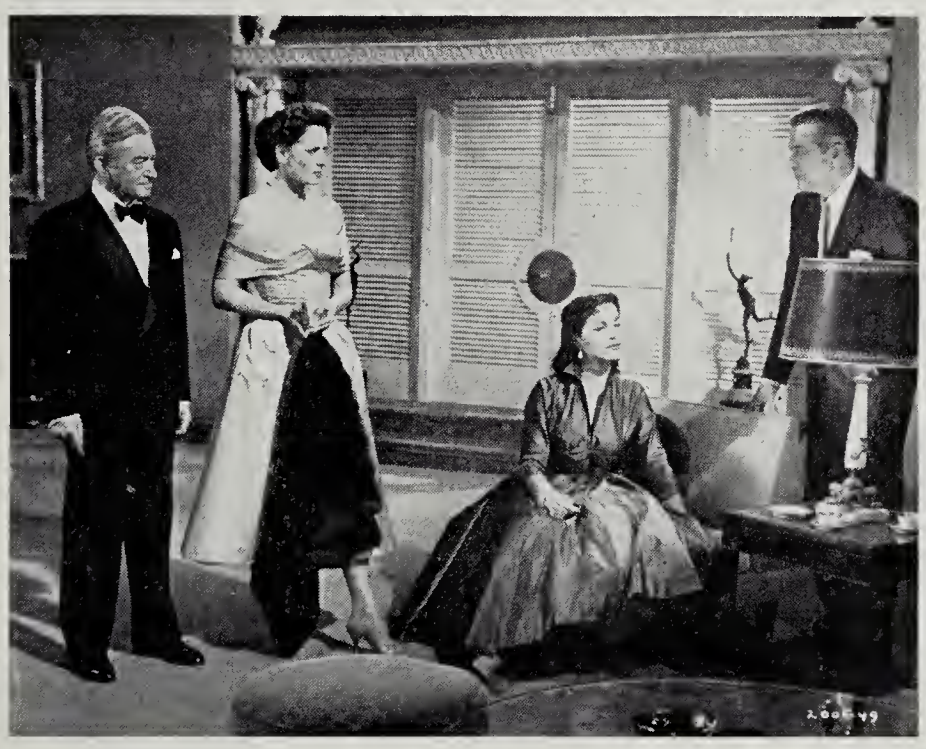
But this was nothing compared to the 12 to 14 days' delay encountered in getting through Portuguese customs the sound and lighting equipment that had



LISBON'S CINTRA restaurant, one of the several natural location interiors which posed a lighting challenge for cinematographer Jack Marta. Here photofloods augmented larger set lighting lamps.



CAMERA WAS deliberately set back 600 feet from Cathedral altar to capture full scope of edifice and at same time allow full and continuous action of players from door at right.



EXAMPLE OF lighting achieved within the Lisbon film studio. Here Claude Rains, Maureen O'Hara, Miss Furneaux and actor-director-producer Ray Milland enact scene on major set erected there.



NOT A PROCESS shot. There are frequent scenes such as this is "Lisbon" which combine foreground action with distant vistas of the city of Lisbon skillfully photographed.

to be brought in from England—a difficulty that was again encountered when it came time to ship the equipment back.

Despite the fact that Jack Marta had not the abundant supply of lamps and lighting equipment of Republic's Hollywood studio to draw upon, he accomplished wonders—especially in lighting the location interiors. These included scenes within the Castle of Pina, the Cathedral, banker Esperito Santos' mansion, and the huge kitchen of an old and famous castle, now converted to a restaurant. Perhaps the most remarkable shot of all was that made inside the Cathedral, with the camera 600 feet away from the altar where the story action took place. Marta and his crew poured every available foot-candle of light into this set to capture a color shot having remarkable depth.

The natural beauty of Portugal and especially the Lisbon area gave Marta a field day in composition, for here the many and varied colors cry out for photographic reproduction. One of the most notable of exterior shots is a beautiful mountain vista framed by a huge, ornate stone arch—a picturesque setting for an important scene between Ray Milland and Maureen O'Hara. Here Marta and his camera produced a cinematic masterpiece.

Exterior shooting was constantly hampered by the weather. It was the rainy season and quite cold. But one would never suspect this watching "Lisbon" unfold on the screen; for the exteriors show the brilliant and delightful sunshine that is otherwise natural to Lisbon; and the purple haze veiling the distant mountains only added to the pictorial results obtained with the Trucolor process. Obviously a great deal of pa-

(Continued on Page 554)

Cinerama's Search For Modern World Wonders

Cinematographers Harry Squire and Gayne Rescher focus Cinerama's three-lensed cameras on spectacular scenes and events for Lowell Thomas' "Seven Wonders of the World."

By SAUL COOPER

THERE IS A TRIBE of fierce Arabian warriors living in a village of dried-mud huts called Beihan. Several months ago great preparations were made there for the arrival of a chieftan from a foreign land. Sherif Hussein's five-thousand camel-mounted warriors came down from the hills, brandishing their gleaming swords.

They watched a silver reflection in the deep blue sky grow larger and materialize into a Pan-American Airways DC-4. It circled, then alighted nearby on a hard-packed strip of the desert. Lowell Thomas had come to pay a call in his "Clipper Cinerama." And with him was veteran director of photography Harry Squire, A.S.C., and his crew that included cameraman Jack Priestley, T. Coleman Conroy, Michael Mahony, James Morrison, Harvey Gengins, and soundmen Richard Pietschmann, Jr., and Fred Bosch.

Here were to be filmed scenes for the third Cinerama production by Lowell Thomas—an adventure journey of his dreams. He had circled the globe many times over a period of forty years reporting and recording—in conventional motion pictures—the wonders and experiences he had encountered. Now he was about to retrace his steps, in a 'round-the-world journey, but this time with the ultra-wide-screen Cinerama cameras and sound recording equipment capturing sights and sounds for "Seven Wonders of the World."

Actually, two Cinerama production crews had been organized and both sent circling the globe by air. One unit was headed by Paul Mantz, veteran of many aerial cinematographic assignments and the daring flyer who took his converted twin-engined B-25 bomber with a Cinerama camera mounted in its nose down into the yawning chasm of the Grand Canyon, then through the steep gorges of Zion National Park for thrilling scenes for the "America the Beautiful" sequence of the first Cinerama production. Now he was taking his Cinerama-borne craft to strange and interesting world scenes with cameraman Harry Squire and later Gayne Rescher training the big tri-lensed cameras on strange people and places from the air.

The second unit, headed by Lowell Thomas, set out soon afterward to film world wonders from the ground, using the Cinerama Clipper only for transportation. A "flying film studio" and home for twelve crewmen were provided in the "Clipper." No elaborate script had been prepared. Instead, directors were engaged to develop stories in locations around the world. The Clipper with the Cinerama sound system and camera and the crew would hop from location to location, using a unique sort of "leap-frog" system, filming the stories of people and places laid out for them. Harry Squire now had left the first production unit, with Gayne Rescher behind the camera, to direct the Cinerama photography for Lowell Thomas.

Ted Tetzlaff, veteran Hollywood director and cameraman, had begun the Cinerama odyssey in Cairo on September 27, 1954. His many years as an ace Hollywood cameraman made him a



HARRY SQUIRE, ASC, (left) and assistant Jack Priestley compare exposure meter readings before shooting a sequence at the elephant training school in Gangal-Na-Bodio, Africa, for Lowell Thomas' "Seven Wonders of the World."



START OF thrill sequence in Cinerama's "Seven Wonders of the World" is photographed by Harry Squire's assistant Jack Priestley.



TRIBAL DANCES were performed by giant Watusi warriors of Ruanda-Urundi for Cinerama, with camera mounted on truck in foreground.

natural choice for the difficult assignment, for the Cinerama camera had the peculiar knack of looking out of the corners of its three-lensed "eyes." One year later, almost to the day, Walter Thompson, one-time newspaperman and film cutter, brought home the unit after completing the American sequence. The months between were, for the film makers involved, a time of exciting personal adventure—as well as the most challenging undertaking of their respective careers.

The itinerary through the early months of September and October read like a course in the Classics and the Bible. The civilization of the Ancient Egyptians was symbolized by the feluccas loading grain on the banks of the Nile, as they had for several thousand years. In the harbor of Alexandria the Cinerama crew searched for the site of the great lighthouse named Pharos. This was one of the original seven wonders of the ancient world. They found but meager remains of the Temple of Diana in Ephesus, the Hanging Gardens of Babylon in modern Iraq, the statue of Zues by Phidias at the home of the gods in Mount Olympus and Mausoleum of Caria in Halicarnassus. In the North African harbor of Rhodes they searched for fragments of the great Colossus. Then to meet Lowell Thomas at the site of the last remaining of the seven listed wonders—the Pyramid of Cheops, side-by-side with the sister Pyramid of Kephren and the half-human, half-animal Sphinx. It is here, at the edge of the Sahara Desert, that the "Seven Wonders" adventure through the ages of Man begins.

Director Andrew Marton, a Hungarian who had filmed successful features in the central European Alps and in the heart of Africa and had worked recently for MGM on travel-adventure films, prepared this sequence. Meanhile, Ted Tetzlaff and his crew were following the course of the great civilizations to Jerusalem, Athens and Rome. The great religious relics of the Holy Land, equally sacred to Christians, Jews and Mohammedans, were recorded for Cinerama audiences. And the creations of the "Golden Age" of the pagan Athenians at the Acropolis, still preserved, and the Temple of the Wingless Victory served as symbols of this birthplace of democracy.

In Rome, Director Tetzlaff visualized the triumph of Christianity in the western world. In the Colosseum, where bloody rituals were performed for the Roman gods, Cinerama filmed a solemn religious ceremony. Then, happy for

(Continued on Page 556)

WITH THE CINERAMA camera mounted on scaffolding in front of summer home of Pope Pius XII, Pontiff makes his first appearance in a feature film production.





SHOOTING the opening sequence for Lowell Thomas' new Cinerama adventure. Cinematographer Harry Squire (in white cap) is focusing camera on Lowell Thomas backdropped by the Sphinx at Ghizah, Egypt. Site is last of the original Seven Wonders of the World.



FILM UNIT of Northrop Aircraft, Inc., shooting scenes on location for award-winning "Airman Smith." Recording the action are two Mitchell 16mm cameras. Booster light is supplied by two foil-covered reflectors. Directing the photography is Felix T. Barlow

MAKING FILMS AT NORTHROP

Aircraft company's film unit boasts 20 full-time employees and owns a quarter of a million dollars worth of production equipment. Its latest public relations film, "Airman Smith," was honored with awards at the 1956 Cleveland Film Council Festival.

By FREDERICK FOSTER

MOTION PICTURE film production within industry by industry's own film production units is no longer the "nuts and bolts" operation it was a few years ago. Industrial film production has achieved new stature and today some of the finest 16mm industrial films—many of them award-winners—have been produced by and for many of the nation's biggest industrial firms. An example is "Airman Smith," a 16mm motion picture in color and sound produced by the motion picture unit of the Northrop Aircraft company, Inglewood, California.

"Airman Smith" is an authentic representation of events that lead up to and follow the decision of a young man who decides to become an airman. Locations, equipment and starring personnel are authentic. Most of the film was shot on United States Air Force bases, and the Air Force's most heavily armed fighter interceptor, the Northrop Scorpion

F-89D, was used for a series of thrilling aerial sequences.

Notable is the fact that the film carries no propaganda nor advertising for Northrop craft or the company. But the film's institutional value to Northrop is as tremendous as it is subtle. It recently won a trophy award and a certificate of merit in the Ninth Annual Cleveland Film Council Festival for the category of Career-Guidance-Recruitment & Training.

"Airman Smith" was produced wholly by the motion picture unit of Northrop Aircraft, Inc., with the full cooperation of the United States Air Force, as a public relations project. Production and pre-production planning of "Airman Smith" required more than a year due to the challenge of making the film sufficiently subtle to project proper attitude-influencing qualities while maintaining maximum entertainment value. The production staff included E. R. Woodworth, film director; Felix T. Barlow, director of photography; J. L. Wilkinson, aerial photography; and crew members Lynn Sterling, G. A. Dallwig, G. R. Rulien, and R. V. George. Alan Christie developed the original research and script. Donald Nicholson headed the unit and C. H. Watson scheduled, handled business, and acted as unit manager.

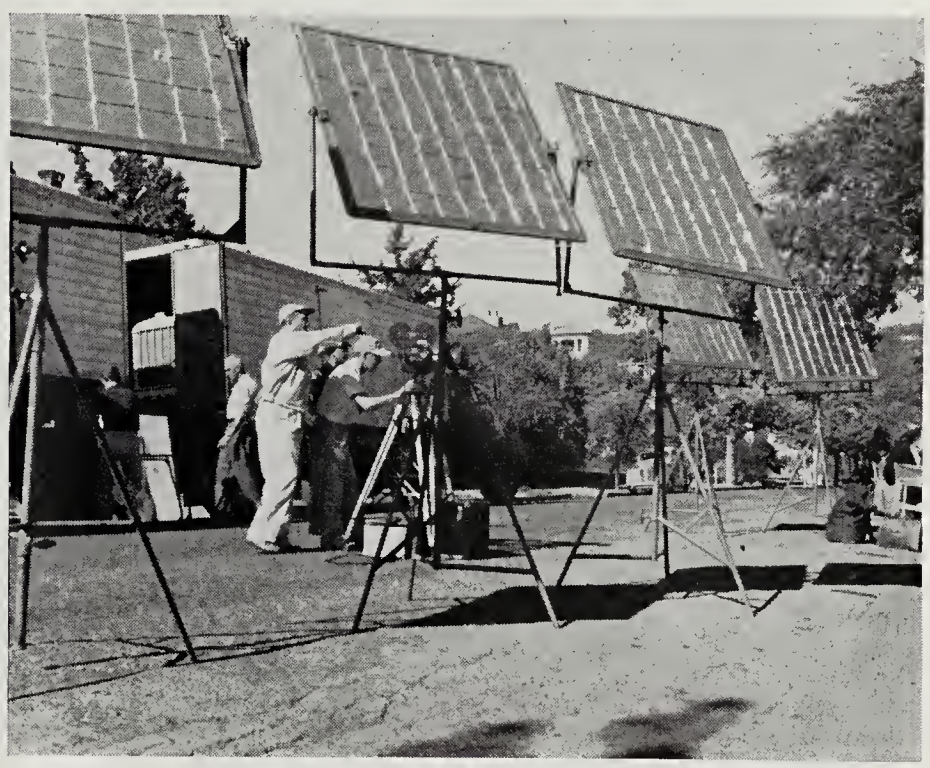
The unit's 16mm Mitchell cameras were the workhorses on the production aided by Bell & Howells and Cine-Specials for special hand-held shots. Commercial Kodachrome was used exclusively.

Because so much of the company's film production is in the field rather than within the plant, two large trailer cabs have been provided for transporting the necessary production equipment such as reflectors, parallel components, lamps, lamp stands, dolly track, and the usual array of grip equipment. In addition, each cab is equippcd with a 350-amp power generator capable of supplying adequate electric current for average location interiors and for booster lights

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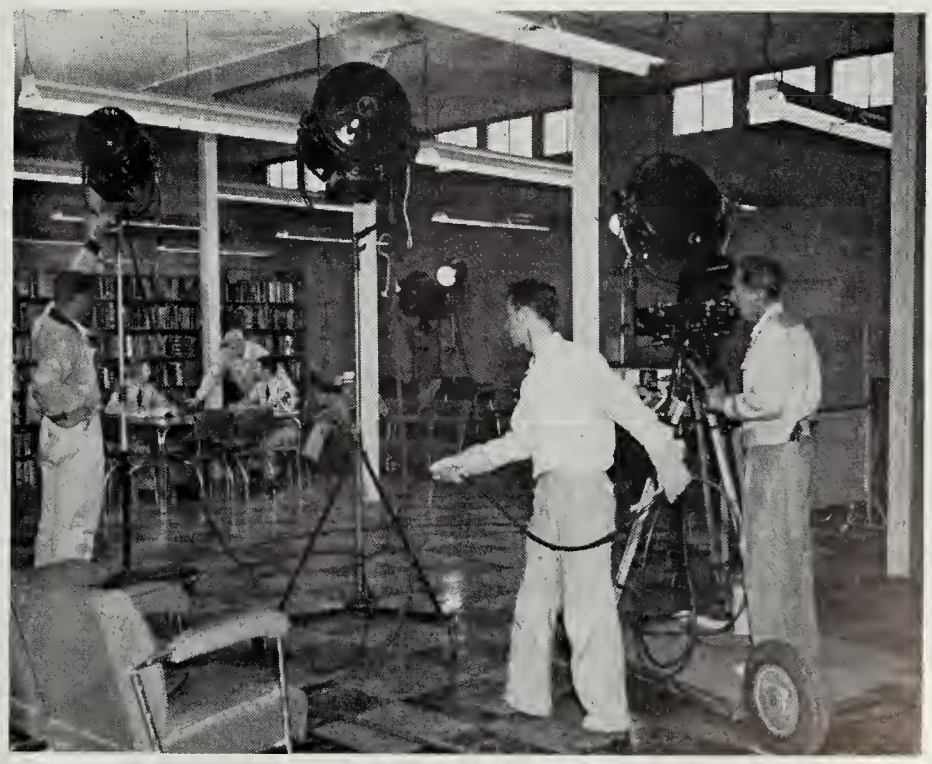
FORK LIFT trucks were used to advantage in elevating camera for close shots of cockpit action at Hamilton and Park air bases.



REFLECTORS supplied fill light for shadow areas in most of the exterior scenes filmed for "Airman Smith."



LARGE, DARK interiors posed challenge in lighting, but unit's fine professional equipment proved adequate in this Chapel scene.



COMBINATION of mazda, fluorescent and daylight here posed problem for color photography; was solved by proper use of filters.







IN DESIGN, as in drama, there are two important principles: rhythm and contrast. It is the function of light to define all these. Scenes above are from author's 16mm color film, "Elyra," and demonstrate author's lighting technique. Bottom photo is an underwater montage in same production.

PICTORIAL SIGNIFICANCE OF LIGHT

Color is capable of astonishing range depending on the character of the illumination that is trained upon it.

By NADINE PIZZO

THE MOTION PICTURE is a composite medium resulting from the wedding of the dramatic art with that of painting. A new creative medium born from the union of two great art forms as old as civilization, the motion picture must observe certain fundamental laws governing both theater and painting. As in the parent mediums, so in the motion picture, one of the most indispensable and powerful creative factors is light. While the fusing of the two older arts in this new composite form is so complete as to render them virtually inseparable, certain elements common to both can be effectively analyzed under either of the separate categories. Thus we can consider lighting under the heading of drama or under the heading of the picture. In this discussion I shall confine myself to the analysis of light as a pictorial element of the motion picture.

Since painting is the art from which the pictorial aspects of the motion picture are derived, we must first consider briefly those elements which make up what is known as the plastic form of painting. From the many ingredients that combine to produce a fine painting we select three that are absolutely basic. They are color, line and space. These three elements work together to produce the plastic unity without which no pictorial work can attain artistic reality. As long as satisfying plastic unity is achieved, these means can be utilized with infinite variety. We have only to refer to the great diversity of styles in the realm of painting to realize the scope for individual expression that is possible through the knowing manipulation of these fundamental plastic elements.

Among the several accessory factors that are used in conjunction with the major three, light is paramount in importance. It is the function of light to support, develop and interweave the basic elements which give existence to any picture, be it a painting, a color slide, or a motion picture. Therefore, let us analyze the function of light in relationship to each of these main pictorial categories.

First let us consider the relation of light with color. They are virtually inseparable, in that the very existence of color is dependent upon light. Color can be regarded as the raw

(Continued on Page 563)

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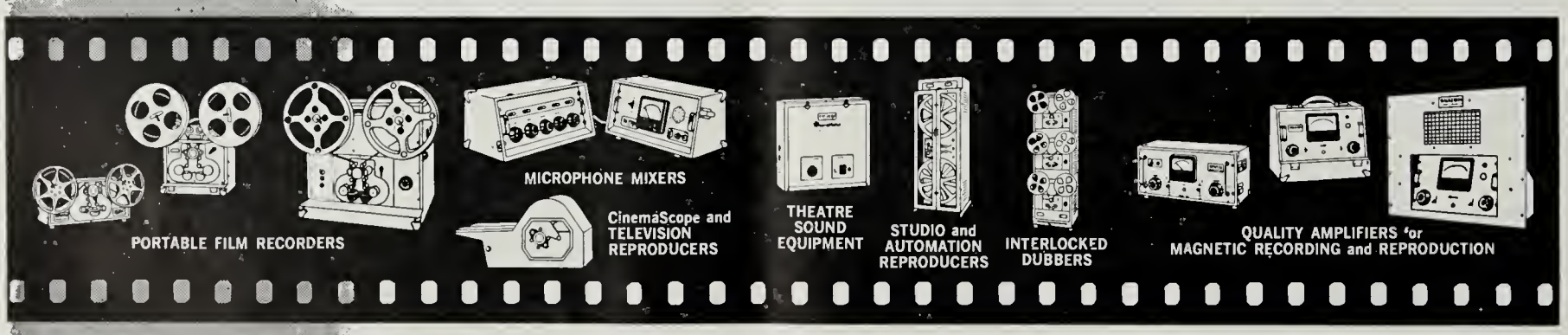
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Filming From Your Doorstep

Shots made unobserved have an honesty about them that fascinates the toughest audience.

By HAROLD BENSON

THE PROFESSIONAL, beseiged by crowds every time he goes on location, must often envy the amateur. A hand-held 16mm camera no longer attracts a swarm of inquisitve spectators. Even that old enemy, the hand-waving, grinning, in-the-shot-at-any-price individual, seems to be dying out. The amateur's chances for unobserved candid camerawork have never been better.

But although this kind of shooting is clearly ideal for the 16mm enthusiast, he is inclined to be skeptical of its potentialities. After all, he argues, we can all see the life around us every time we we walk down the street. What's the point in putting it on the screen?

The answer lies in theme and selection. A film of this type is doomed if the director starts shooting street scenes which have no significance beyond a pictorial attractiveness. Something must originally move or excite him before he takes a single shot. Once the theme is established, selection follows automatically.

This is an everyday subconscious process. If, for example, you are angry to read accounts of local hooliganism one morning in your newspaper, each instance that you see during the next few weeks will seem more noticeable than ever before. The long periods between the acts will be forgotten, and each action will be brought into sharp relief.

In just the same way your chosen theme will give you a fresh eye on your street scenes. But beware of being misled by the idea of a "chosen" theme. Your theme should choose you. Instead of struggling to find a subject, wait until the next moment that a normal circumstance excites some emotion in you and then ask yourself, "Can this make a film?"

The chances are that this will be prompted by some familiar street sight. You might be amused by a crowd of youngsters unconsciously imitating adults. You might be alarmed by a narrowly-avoided traffic accident. You might be intrigued by the number of reluctant husbands in the firm tow of determined window shoppers.

Whatever your subject and reaction, it's almost certain that your theme can be expanded and developed right where the idea struck you—in the street. This isn't the kind of film making which can be tightly scripted, but it's still important to work out in advance a rough outline of your sequences. Unless you're absolutely sure of the material you want to get you'll waste a lot of film stock.

In any case be prepared to shoot at least twice and probably more than three times as much footage as you'll need. Candid camerawork is fascinating—but infuriating to shoot. All too often the unconscious gesture, the give-away expression, the tell-tale mannerism vanishes as you press the button. The best action invariably takes place against the sun, or in impossible rain.



THE CINEFILMER with a telephoto or a zoom lens is ideally equipped to capture unobtrusively interesting, natural action from a distance.

Passers-by who spot the camera stop dead, thinking you're taking a still photograph. Those who don't spot it jostle you, walk between lens and subject or perform some totally unexpected action quite useless for your purposes.

There are a thousand snags like these. But the results are worth it. Unobserved shots have an honesty about them which fascinates the toughest audience. Selective shooting and firm editing can show them anything from the routine carelessness of road users to the unconscious humor of bewildered toddlers dwarfed by the legs of passers-by.

Posed sequences spell disaster to this kind of film. Every shot must be what it seems to be. Nothing shows up staged action as much as a framework of genuine off-the-cuff location scenes.

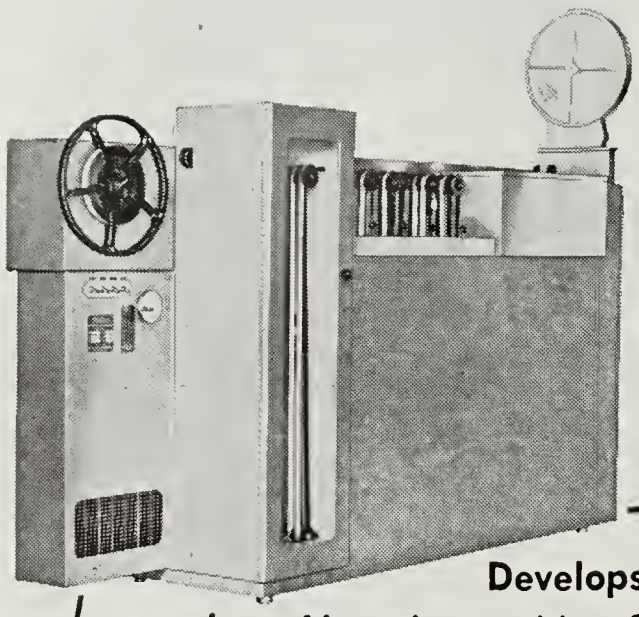
The practical difficulties are considerable. How do you get in close enough without the subject becoming aware of you? How do you anticipate a significant action? How can you prevent the background figures staring into the lens?

The amateur with a telephoto lens is obviously off to a flying start. He can nose up to his subjects from the other side of the street. A parked car makes an invaluable blind for the cinematographer stalking his quarry. From such a curb-side seat he can shoot the passing pedestrians unnoticed. Even the whir of the button is hidden.

But the best place for those rich, full closeups you need is the pavement itself. You can lounge in a doorway or loiter by a shop window. Whatever you do you'll need the patience of a bird watcher—and similar tactics.

Don't worry too much about camera steadiness. Set your focus and exposure in advance, make sure the camera's fully wound, and then dawdle, idle or what-you-will by the person you're after. Try not to let him see the camera at all. Even if he does see it, never let

(Continued on Next Page)



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FILMING FROM DOORSTEP

(Continued from Page 553)

him realize he is your intended subject.

When he makes the gesture or expression you've been waiting for, don't hesitate. Step alongside and shoot. If you're coming in for a really big close-up, he's bound to swing around to see what you're up to sooner or later. But often it's later; and a B.C.U. makes its impression on the screen much quicker than any other shot. Cut that startled glare off the tail of the scene and you'll frequently find you've enough for your purpose.

These B.C.U.'s are, of course, the most difficult problem in candid camera-work. The only real solution is this surprise attack system. If there are two of you working together, so much the better. Hide the camera between yourself and your friend almost at eye level until the optimum moment—then step out, already whirring.

Another dodge is to have your friend apparently reading an open newspaper as he lounges against the wall. You're hidden on the other side of the paper, and he keeps up a quiet commentary on who's coming.

Tales of cameras hidden in suitcases and parcels always seem a little suspect to me. Someone holding a suitcase to one eye would probably attract far more attention than an undisguised camera.

In a doorway a waist-level viewfinder often proves its worth. If you're gazing down at a camera instead of through it, it's astonishing how few people notice you. And don't forget that your best chances occur when your subject's attention is otherwise engaged. A friend's conversation, a shop window display, an awkward perambulator—each is sufficient to distract from camera and operator.

Street shooting sets its own special problems. But for true, factual reporting it is essential. Facing and solving such difficulties is as fascinating for the experienced amateur as the result is for his audiences.

SHOOTING "LISBON"

(Continued from Page 545)

tience went into the filming of such scenes. Whenever it was possible to move the big mobile generator to a location site, Marta used booster lights for fill. Reflectors were used only when power wasn't available.

Many hardships dogged the "Lisbon" company at the beginning. The day after Marta and his crew had completed shooting exteriors on the picturseque Lisbon

hills and on the waterfront, torrential rains began to fall and huge floods swept Portugal, with many familiies forced to flee their homes. Fortunately, the company was able to move indoors and shoot interiors at the local studio.

At the close of each day's shooting, the negative was shipped for processing to Consolidated Film Industry's laboratory at Ft. Lee, New Jersey.

"During the first two weeks of the production," said Marta, "I had to shoot blind, without benefit of dailies or 'rushes.' All I had to go on was an occasional test strip. It was a relief when our dailies began to arrive and revealed that everything was going along nicely photographically."

In the absence of technical help, electricians, property men and other production aides were trained on the spot. As there were no prop houses in Lisbon, the company had to beg, borrow or buy the props it needed from private homes. Priceless and world-famous antiques appearing in "Lisbon" as well as rare first edition books were loaned to Republic by the Lisbon Museum for various sequences. It marked the first time the priceless volumes and antiques had been out of the museum.

Says Jack Marta: "The next Hollywood film company arriving in Lisbon to shoot a picture will find the nucleus of a trained crew to augment its Hollywood technical personnel. The local boys cut their eye-teeth on this Republic production and eagerly await another opportunity to show what they can do."

"MOBY DICK"

(Continued from Page 535)

story is basically a tale of adventure about tough men fighting giant whales, the color in the photography could not be "soft" or pastel. Finally, there was the desire to transport the viewer back in time to the actual period of "Moby Dick," 113 years ago.[1]

The ordinary color techniques, they decided, would not achieve the proper effects. The process followed for "Moby Dick" consisted of shooting Eastman color negative, then two different sets of negatives were made; one, a desaturated color master, and the other, black-and-white. Both negatives were printed together, one on top of the other with exact registration, to obtain an unusual, somber or "muted" effect in the release print. Color is always present in "Moby Dick," but is a toned-down color that does not detract from the interest of the drama being portrayed.[2]

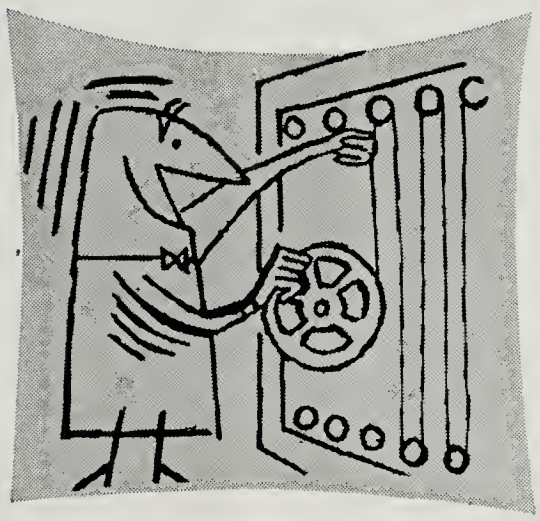
Location work began at Youghal, Southern Ireland, where Huston built his famous waterfront for the early de-



"Gotta have a screening tomorrow night."



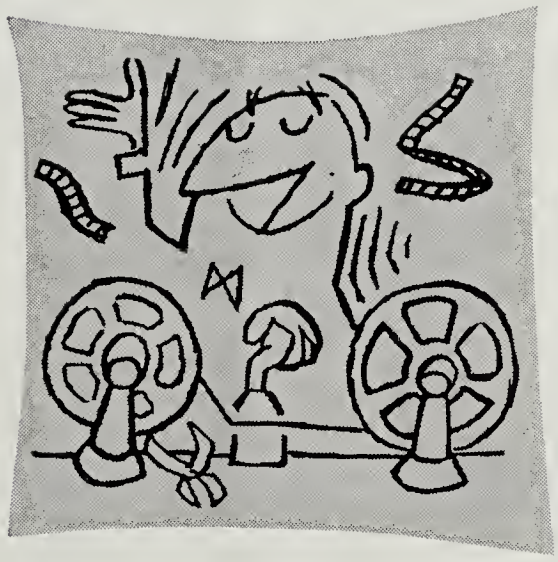
"Yes sir we'll get it there . . . on time!"



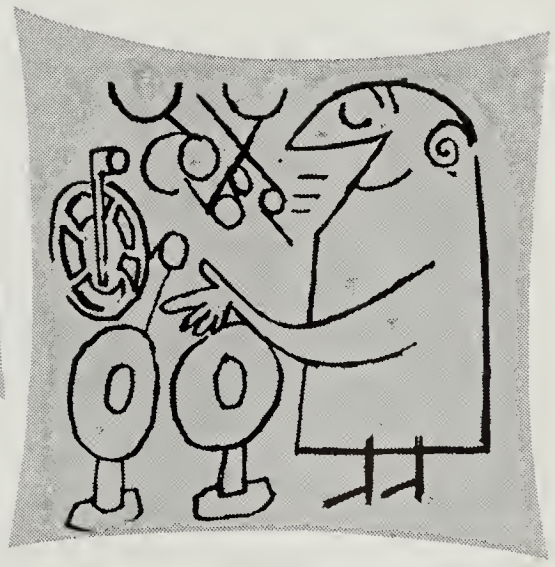
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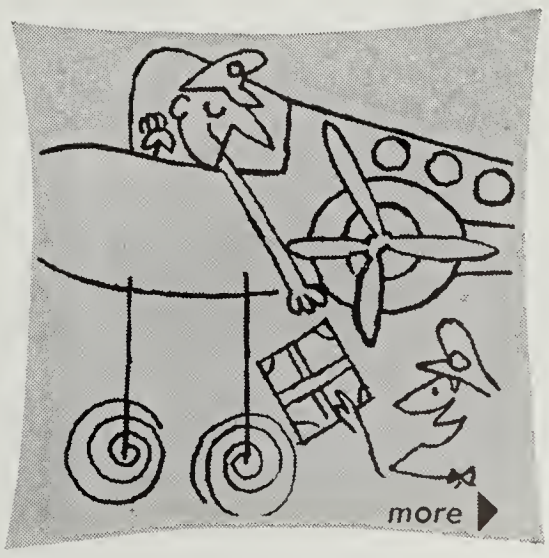
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parture sequences. Youghal had previously been a harbor, but had become so silted up that it had to be dredged before the ship could be brought in. Most of the sequences at sea were shot off the coast of Fishguard, Wales, where there was sufficient sweep of horizon without catching unwanted corners of coastline.

Final winter shooting was done in the Canary Islands, as the water was a less icy ordeal for the members of unit and cast who had to brave it. During the longboat scenes Morris was soaked to the skin in every take. The camera was on a heavy stand at one end of the boat, wrapped in a plastic mackintosh.

"But it didn't keep the sea out," Morris told me. "Eventually we had to have a plastic blimp. Even then the salt water still got inside somehow, and taking the camera apart became a routine chore. Under the circumstances it stood up very well."

A few sequences had to be filmed at Associated British's Elstree studios, despite Huston's eagerness to shoot everything at sea. Britain's notorious climate could supply most things but not the motionless sea needed for the sequence showing the ship becalmed.

The storm, too, presented difficulties. A series of interlocking Government regulations prevented this being filmed at sea, and again a studio sequence was unavoidable. Before shooting began Huston and Morris studied screen storms from past movies.

"We agreed that most of them, though often packed with action, lacked a sense of audience participation," Morris told me. "There was plenty of movement in the scene, but the camera itself was rigid. I decided to treat the storm more realistically. If a man were trying to shoot it on the deck he'd only be able to use a hand-held camera. As each wave hit him he'd have to struggle to regain his balance. Everything would be on the move."

In "Moby Dick's" storm sequence everything *is* on the move. Morris suspended his camera so that it swung from the studio roof. When the waves hit the operator he really had to fight to control the camera. Thus Morris brought the audience out of their seats into the teeth of the storm.

"I avoided off-the-ship shots, too," he added. "I think shots of a ship taken from a point a few feet out in space, apparently dangling in air, look so phoney that they can ruin any attempt at realism."

Morris's color style in "Moby Dick" does not attempt to repeat his celebrated experiments in "Moulin Rouge." "I like to try something new each time," he explained. "The photography should always be dependent on story and subject. If you can help build a little tension by hiding part of a star's face—well, that's a more sensible attitude than saying 'He's costing umpteen thousand so let's show him!' "

Equally happy in color or monochrome (his previous films include Moulin Rouge, Beat the Devil, Beau Brummel and The Man Who Never Was), Morris dislikes the loose compositions involved in wide screen shooting. He believes that there's room for all screen sizes, but likes working to a definite format.

He insists that one of the greatest dangers in photography is that of swamping a film with a gimmick. "Despite the emphasis on blacks and whites in "Moby Dick," this monochrome in color effect was never meant as a gimmick," he pointed out. "I found that we could get really dramatic effects using strong blacks and whites under quite dull conditions."

Always eager to experiment, Morris enjoys working with Huston. "A director like Huston gives you a chance with new ideas," he said. "If you look at the top directors working today, you'll find they're all individualists. Cameramen have got to be rebels, too."

References

1 & 2. Norman Wasserman, "Muted Colors in "Moby Dick," *International Projectionist*, 415, Aug., 1956.

CINERAMA

(Continued from Page 547)

"Seven Wonders" travelers, all the splendor and rich tradition of the Catholic Marian Year was captured in the piazza before majestic St. Peter's. We are there when the Pope blesses the throng of 100,000 devout worshipers. Then Cinerama has a personnel audience with Pope Pius XII. It was one of the unique achievements of this three-projector screen process that touched off the motion picture revolution in 1952. Never before had a motion picture camera been permitted this privilege. And never before had such a message of peace and unity been brought to so many people.

This is how it happened. Associate Producer Malcolm Miller ran into the crew's hotel lobby in Rome one gray day. "Grab your gear," he shouted. "Don't bother to change into your Sunday clothes. You're going to work." In nothing flat the crew piled into the trucks and headed for Castel Gandolfo, summer residence of the Pope. At the entrance-way to the courtyard where Pope Pius XII was scheduled to give a "familiar audience" at 11 a.m., Cinerama saw the first example of Papel

splendor—an assembly of the Swiss Guard, wearing the purple and yellow uniforms designed for them in centuries-past by the great Michaelangelo.

Quickly the crew piled out of the trucks and set to work erecting parallels before the balcony from which the Pontiff would speak. The massive Cinerama camera would be less than two feet away from His Holiness. Cameraman Harry Squire placed his lights and insisted upon the removal of the glass partitions on the balcony. They would reflect. So would the balcony door. He sent two Catholic crewmen upstairs to hold back the doors, incidentally giving them a chance to met their Spiritual Father.

Meanwhile, Director Ted Tetzlaff was positioning the camera on top of thc parallels, with Jack Priestley crouched behind the viewfinder as operative cameraman. Casually, into the center of all this excitement walked the Pope and his valet. Stunned with excitement, the Cinerama party listened as the valet, dressed in white tie and tuxedo, discussed with His Holiness the relative advantage of wearing a woolen vestment or ermine cape. Dr. Melis translated the undertakings to the Associate Producer.

It was Mike Mahony's job to signal by pulling a curtain when the Pope was about to enter onto the platform. Instead, three red-robed Cardinals decided to peek through the doorway to see what was going on. Priestley hit the lights and set the camera rolling. There were anxious moments, with the film unreeling, before the Pontiff decided to emerge on the scene.

Almost before it started, it seemed to be over. In a pure white robe, on a simple balcony draped with red-velvet tapestry. His Holiness Pope Pius XII, had recited the Latin blessing. He re-entered the room, and there followed more conferences with Papal advisors. What was going to happen now? Then, an amazing request. "Would Cinerama care to repeat the effort? Cinerama certainly would. The Pope had been anxious about the unexpected brilliance of the lights and the big, black camera staring him in the face.

The Pontiff was less nervous about the entire experience than any of the Cinerama crew. In high good humor he said, "Ah, you Americans, you always want two to make sure." And almost before the lights could be struck again, he stepped back on the platform.

He returned to the room and began chatting with the kneeling crewmen. This was for them their supreme religious moment. But they could hardly summon up their speech.

First His Holiness asked, in complete naturalness, "How was I?" "Great," said Conroy.

Then the Pontiff asked Mahony for

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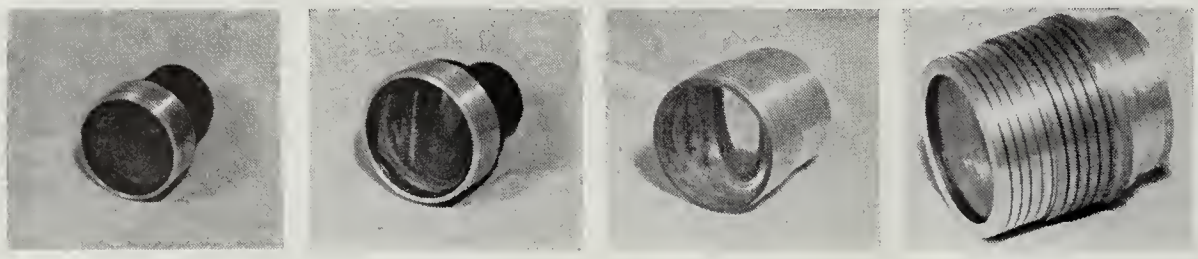
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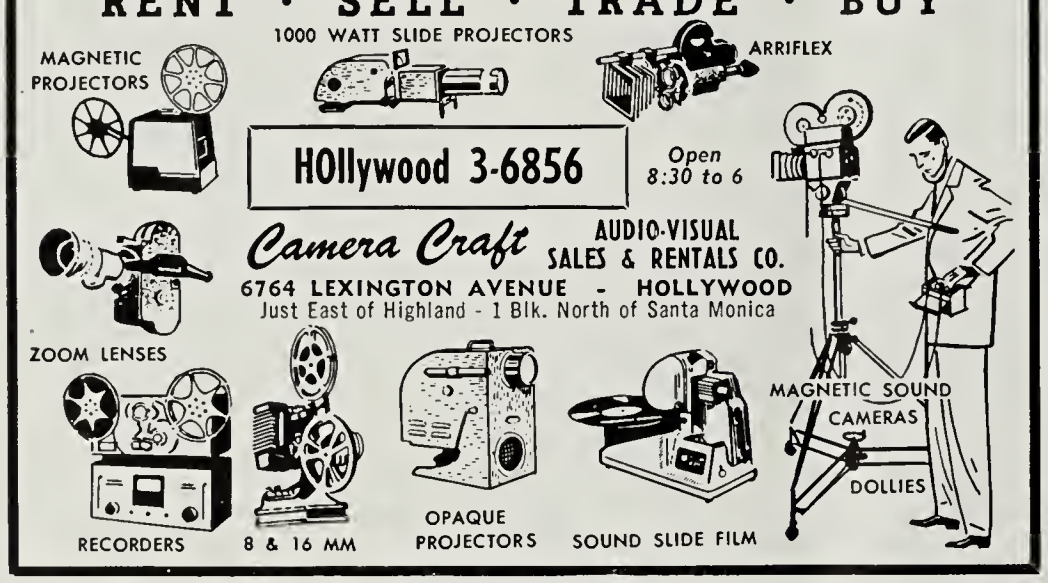
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the name of his home town. Mike didn't remember very clearly at the moment, but finally got out, "America."

The men suddenly felt embarrassed about their work clothes. The Pope went on to ask Mal Miller about the nature of the Cinerama camera, the number of men in the crew, and where they were from. And then he turned, walked toward the door with his valet and waved goodbye.

"By the way," he said, "would you like some silver medallions for your men?" In a few minutes the valet returned with one for every member of the crew.

So the great experience had been completed at last. The crewmen looked out the window into the ancient courtyard. The 35-foot high scaffolding was already being dismantled, and the lighting was killed.

The "Clipper Cinerama" journeyed next to Wadi Beihan for the visit with Sherif Hussein. Then to the Queen of Sheba's shipyard in Aden. From there to Riyadh, the royal city of Saudi Arabia, the home of the Sauds, for a remarkable basketball game with players recruited from among the twenty-eight sons of the King (each incidentally with his own air-conditioned Cadillac). Here were strange sights of the joining of the old and the new. In the middle of the desert there was the activity of oil pumps, bringing wealth to the world and gold to the Arabian rulers.

It was the same Arabia, too, where the remarkably realistic Cinerama sound system developed by Hazard Reeves, caught the strange and terrifying voice of the "shamal," the desert wind. It was here, too, that a typical problem stalled Cinerama operations. In error, native laborers had poured jet aircraft fuel into the generators. Christmas and New Year's day found the crewmen seated cross-legged in steaming Arabian villages eating holiday meals unlike anything they had ever eaten before.

Meanwhile in Africa, Andrew Marton was preparing new challenges for the "three-eyed" camera. To Kabgaye, Ruanda-Urundi, in the Belgium Congo, they went for a meeting with the seven-foot tall Watusi. They are vegetarians and fine athletes as well as dancers. The

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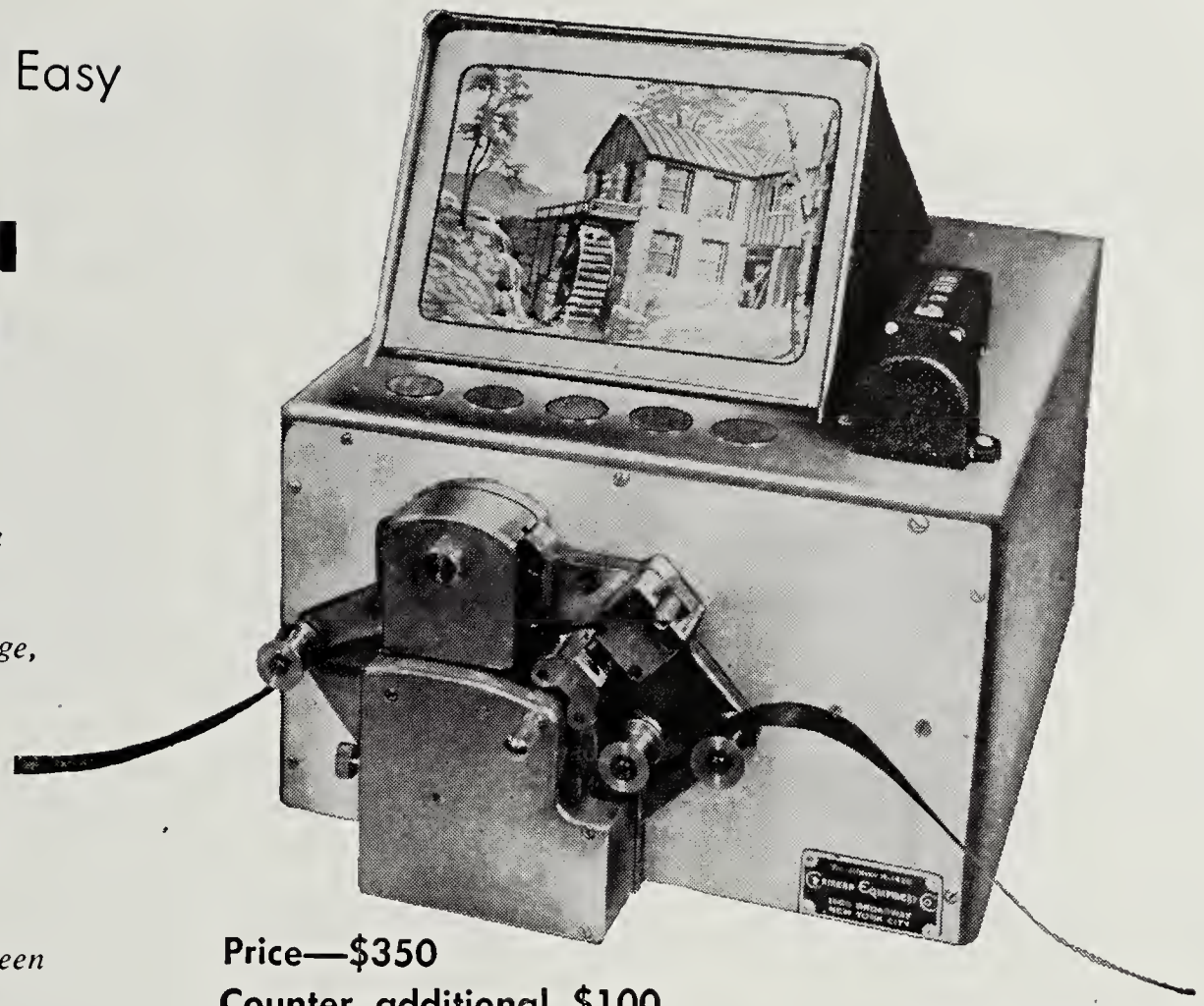
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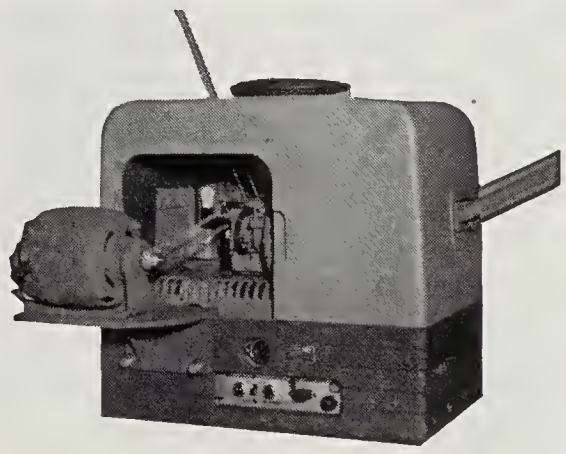
famous dancer, Butera, performed the ancient spear dance which traditionally can only be done before the Mwami of the tribe.

The company moved on to Uganda and Murchison Falls to film the wild life. The camera, directed by Harry Squire, who had performed the same function on the two previous Cinerama productions, and who had photographed Frank Buck's "Bring 'Em Back Alive," operated from the bow of a river barge. The Victoria Nile teemed with elehpants, crocodiles, hippopotami, baboons and other animals. And to get closeups to fill the Cinerama screen, the barge often edged up to the riverbank with no protection from the beasts. Once a hippopotamus surfaced directly beneath the boat, and, in rage, tore a six-foot hole in the side of the barge, just a foot from the spot where Marton was standing.

February saw the Cinerama crew move on to India. Here customs and censorship problems hindered the photographing of the birth of a modern nation. Walter Thompson, the director of the "This is Cinerama" prologue, supervised activities here. He had filmed the Independence Day celebration on January 26, and now he had Tay Garnett constructing sequences in Darjeeling, the holy cities of Banaras and Agra, and the sequences of Mysore Province where one of the last of the maharajahs still reigned. The narrow guage railway in the mountain city of Darjeeling furnished the substance of a thrill sequence to rival the roller coaster scene in the first production and the bobsled ride in the second. The holy river Ganges and its bathers, the grotesque Monkey Temple in Banaras and the ageless beauty of the Taj Mahal were photographed by the all-seeing eyes of the Cinerama camera. In Agra, the poignant love story of the Emperor Shah Jehan, who built the Taj to the memory of his beloved, Princess Arjemand, is re-enacted by Cinerama.

Traveling eastward, the "Seven Wonders" adventurers came upon an amazing story from the past. In Cambodia, Indo China, with soldiers and machine guns behind every masonry corner, there came before their eyes the shell of a city that once housed over three millions. The camera roved its three-lenses on the temple of Ankor Wat. Less than a century ago the city of Ankor was unknown in the West. Then a French archeologist discovered it completely overgrown and hidden from human eyes. Gradually it has been restored, almost an endless task. Today, dancers reconstruct the ancient Camobodian dances on the terraces of the now-deserted buildings.

Then, in the spring of the year, with the cherry blossoms in bloom and the ancient, cultivated gardens taking their



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first green, and the holy mountain of Fugiyama appearing through its frosty halo, the crew arrived in Japan. Walter Thompson was ready for them here with a story that would capture the tradition and delicate loveliness of the Orient. Names like Kamakura and Nara and Todaiji revealed the Diabutsu Shrine and a royal deer park and the largest wooden building in the world. In Takahazuka there was found a music hall rivaling Broadway attractions in America, but blending in some strange way the quaintness of Japan and mechanization of the modern world.

After nine months abroad, separated in most cases from wife and family, the crewmen headed back for the States. Until now no one had suffered more than a case of indigestion brought on by the absence of home cooking and the insistent hospitality of native chefs. Mike Mahony, the perennial Cinerama grip, suffered the first injury on the trip home, when he slipped out of his bunk, as his plane took off from Wake Island, and cracked three vertebrae.

Meanwhile, wherever the "Clipper Cinerama" had not been, it was more than likely that Paul Mantz had passed by in his aerial photography plane. One leg of his journey took him on an aerial pilgrimage through the land of Palestine. He skimmed the jungles and filmed a magnificent series of rainbows at Victoria Falls, one of the three greatest spectacles of its kind in the world. Back in the United States, he circled Manhattan Island by flying under many bridges there. In a single spectacular shot, he photographed the highest and the lowest points on continental United States—Mount Whitney and Death Valley. Lowell Thomas was in the co-pilot's seat for this experience and the sweep-camera shot, and it is said to be the first time that a film personality actually took part in a dangerous aerial sequence such as this. Mantz wrapped up the American continents with a tour down through Mexico, hovering over the Mayan ruins, then to the almost inaccessibel Iguazu Falls in South America, and on to Rio de Janeiro for the famous festival.

Director Thompson took care of the wrap-up, guiding a Cinerama caravan across the United States, seeing the country from the ground in a way it had seldom been seen before.

There was no question where the "Seven Wonders" odyssey would end: in Lowell Thomas' studio in Pawling, New York. It was here that the whole Cinerama adventure had begun, with Thomas tracing the first halting steps of the motion picture industry and human communication. Since September 30, 1952, Cinerama has come a long way. Now the third Cinerama show, the "Seven Wonders of the World," is ready.

When last heard from, cameraman Harry Squire was in India working for Lowell Thomas once again, this time on Cinerama's "Search for Shangri-La."

MAKING FILMS AT NORTHROP

(Continued from Page 549)

used on location exteriors.

Typical equipment inventory for each cab includes 6 Skypans, 6 Seniors, 8 Juniors, 6 Cinelites, cables, junction boxes, 8 reflectors and stands, a Weston or Raby dolly, and a portable synchronous magnetic tape reocrder.

Although the unit is adequately equipped for synchronous sound recording, "Airman Smith" was produced without sync sound and carries narration instead. Only some necessary sound effects were recorded in sync during shooting and dubbed in later.

When on location on the airfields, the company used fork-lift trucks to great advantage, both as camera transports and as mobile camera parallels. Some of these vehicles were capable of elevating the camera and crew forty feet above ground, and were decidedly advantageous when shooting closeups in and around grounded planes. The Raby and Weston dollies, operating on tracks, aided in producing some fine sequences of plane assembly work.

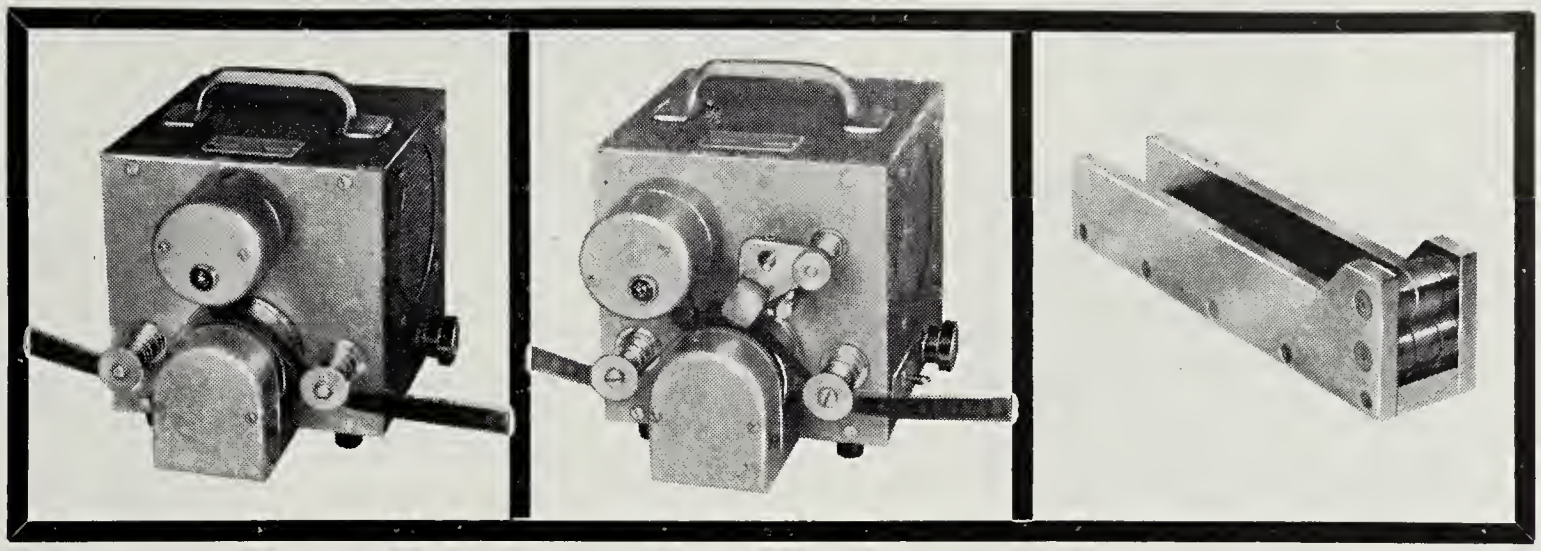
The Northrop crew found plenty in the way of challenging problems when shooting on location. This was especially true when shooting interiors in the Chapel at Park Air Force Base and in the Recreation Hall at Hamilton AFB. Because of the interior decor of each, they were very difficult to light. By utilizing every available lighting unit and current from the mobile generator, and by painstakingly placing and re-positioning the light units for best pictorial results, the problems were ultimately solved. The situations were not unlike so many encountered on location by the directors of photography of major Hollywood studios.

Northrop, perhaps, is the only company of its kind that has consistently enlarged its film production department to take care of the increasing demand for public relations and television films. At present the unit comprises about 20 full-time employees, 10 of which are cinematographers. Mostly these men are graduates of cinema classes of local

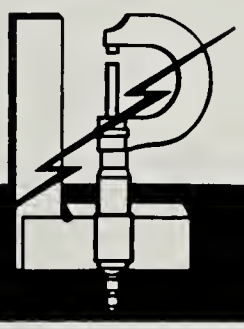
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Universities, although some have come from the ranks of business and industrial film producers.

The company's film making activities began several years ago. It first realized the importance motion pictures when it employed a movie camera to record tests that could be screened at convenience before company executives in the conference room. In those days, when the company wanted a film made, a movie camera was handed to one of the company's staff still photographers with instructions to go out and get what was wanted on 16mm film. Eventually this activity wound up as a major operation and a full-time all-around motion picture cameraman-editor-producer was hired. There was the usual era of "nuts and bolts" productions, when the cameraman would go out to the plant and shoot, without benefit of a script, whatever he was instructed by one of the plant engineers. The footage was usually screened for company officials just as it was shot—without benefit of editing.

For the past ten years, the company has maintained a special camera crew for photographing test and repair films —subject matter that, for the most part, is classified and requires unquestioned confidence in the men handling the films. This activity is divorced entirely from the company's film production unit that turned out "Airman Smith."

Some may argue that Northrop's motion picture production unit does the work that might better be handled by established industrial film producers. The answer is that because Northrop, like most other aircraft manufacturers, is constantly working on U. S. Government contracts, its operations are highly classified or restricted and this precludes the admittance to the plant of others than regular company employees. Whenever Northrop has planned a production that could be handled by an outside film producer, it has engaged him. Wilding Pictures, for example, has made several films for Northrop.

The trend at Northrop today, according to film unit manager C. H. Watson, is to produce films with more of a dramatic slant and to inject something of social significance into the story line of each public relations film. "Airman Smith," for example, is aimed at the prospective Air Force enlistee, and endeavors to point up his very real importance and to show something of the aura of glamour and the excitement that surrounds his activities as an airman. A previous film dealing with the Ground Observer Corps showed how it worked and emphasized how every citizen can aid the Corps' very important function in some way.

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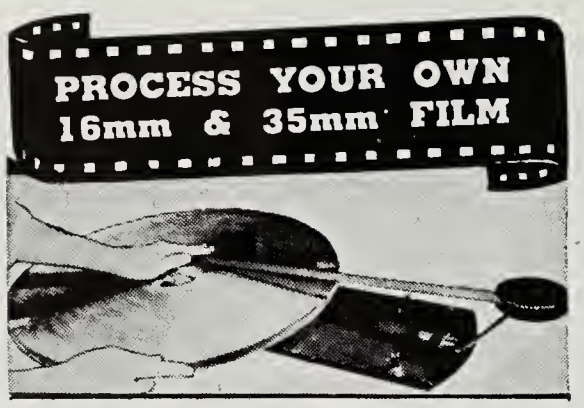
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more readily accepted by general audiences than those made in the theatrical style of Hollywood," said Watson.

Undoubtedly these attributes were the deciding factor when "Airman Smith" was judged and honored for awards at the recent Annual Cleveland Film Council Festival.

EASTMAN PLUS-X NEGATIVE FILM

(Continued from Page 542)

Plus-X Negative, the film support used on the type 4231 incorporates a gray dye to serve as a protection from halation. The support itself is of the latest type triacetate material with improved shrinkage characteristics.

It will be observed by an examination of the time-gamma curves presented at the end of this article that the type 4231 has a somewhat faster developing rate than the type 5231, somewhere in the neighborhood of 25% less in the instance of type 4231. This difference in developing rate should not cause any inconvenience in the laboratory, although the difference between this new fiilm and the older Plus-X is sufficiently great that extreme care should be taken to differentiate between the developing times for normal gamma for the two types of film. It rests with the camera departments to identify properly which film is submitted to the laboratory. If these films are intermixed and the new film is developed for the time normally required for the older type, overdevelopment will result. On the other hand, if the old type 5231 is developed for the time normally required for type 4231, underdevelopment will result. This caution to the camera departments and laboratories seems to be in order so that all film of the Plus-X type submitted by the camera department to the laboratory for processing will be properly marked as to the emulsion code number.

The new film is presently available in the 35mm width, but it will be only a relatively short time before it will also be available as a 16mm negative film carrying the code number 7231. There has not heretofore been available in the 16mm field a Plus-X type of negative film.

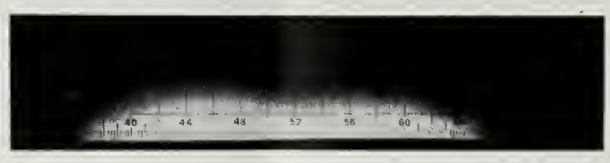
Following herewith is a tabulation of the basic characteristics of Eastman Plus-X Panchromatic Negative Film (Type B), Types 4231 (35mm) and 7231 (16mm).

1. Exposure Index:
 For development to gamma of 0.65
 Daylight — 80 Tungsten — 64

2. Illumination (incident light) table for tungsten light:
 Shutter speed approximately 1/50 second — 24 frames per second

Lens Apertures	f/1.4	f/2.0	f/2.8	f/4.0	f/5.6	f/8.0
Number of f. c. required	40	80	160	320	640	1280

3. Color Sensitivity: Panchromatic



Daylight



Tungsten

4. Filter Factors:

Kodak Wratten Filter Number	No.3 (Aero 1)	No. 8 (K2)	Minus Blue No 12	No. 15 (G)	No. 21	No. 23A	No. 8N5	No. 25	No. 29
Filter Factor for Sunlight	1.5	2.0	2.0	2.5	3	5	5	8	16

5. Recommended Control Gamma: 0.60 to 0.70

6. Base: Gray Safety

7. Perforations: 35mm—American Standard Short-pitch Negative, PH 22.93—1953
 16mm—American Standard, perforated one edge or two edges, except dimension B, 0.2994 ± 0.0005 and dimension L, 29.94 ± 0.02 inches

8. Identification: The letter "H" is printed just before the footage number on 35mm only

9. Time-Gamma Relationship: (See time-gamma curve on page 542.)

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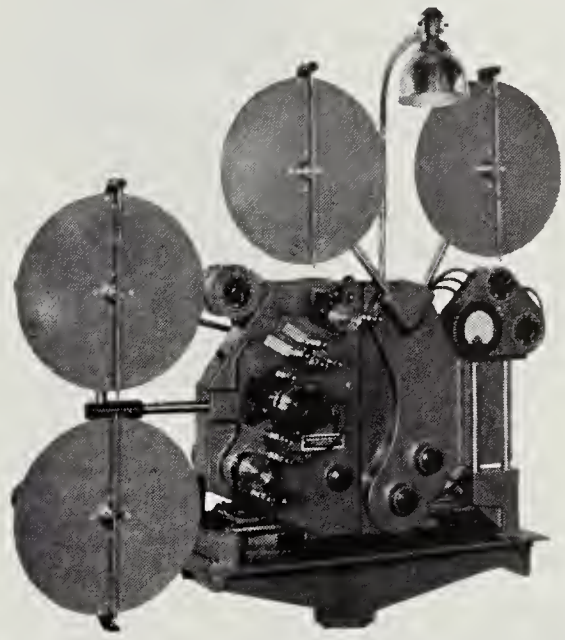
• For printing 35mm negative to 35mm positive.

• For printing 16mm negative to 32mm positive.

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PICTORIAL SIGNIFICANCE OF LIGHT

(Continued from Page 550)

material, and light as the magic that brings it to life.

We have all observed the altering of colors within a room or in a familiar landscape under the ever-changing illumination within the span of a single day. For any desired color result the pictorial artist has but to select his subject and either utilize a particular light quality in nature or produce the wanted color nuances by simulating nature with artificial means. Thus, any color in the entire color gamut is capable of astonishing range depending upon the character of the illumination that is trained upon it. Intensity or diffusion, spotting or flooding, the direction of the light in relationship to the subject, plus the judicious use of colored gelatins, are the light factors that will determine the final quality of any color.

One of the most convincing demonstrations of what light can do for color is to drape a piece of fabric over a chair and photograph it first with flat illumination and then with dramatic side lighting. The experiment will be a revelation of the potential magic of light. The intrinsic emotional connotations of any given color can be dramatically intensified by the proper employment of illumination. Likewise, colors that project a particular mood in one scene can be altered in another to produce an entirely different emotional sensation. With light we heighten the sensuous appeal of color and reveal the emotional meanings that are inherent within it.

Light has the faculty of either unifying or diversifying a color arrangement. It may weld a scene into a perfect harmony, or turn it into a veritable battleground of fierce contrasts. It may likewise achieve interesting diversity within the framework of a harmonious whole. Moreover, it is by selective illumination that we can force certain colors into predominance while holding others in a position of subordinance, as the needs of a scene may require.

Color is that ingredient in any picture most capable of arousing an emotional response. Since color truly lives only in light, it is with the creative blending of these two factors that we produce much of the final mood of our picture.

Occasionally one hears the term "painterly color" used to describe the color quality of a particular color slide or motion picture scene. When faced with such a picture we truly feel that the photographer has transcended the

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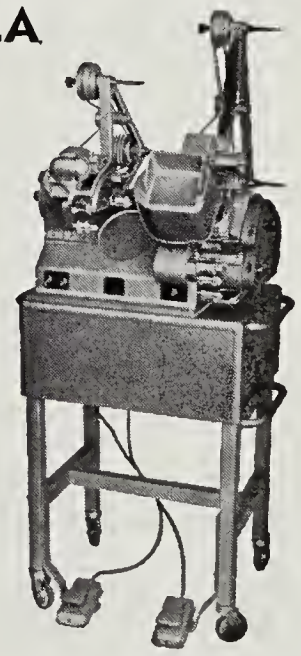
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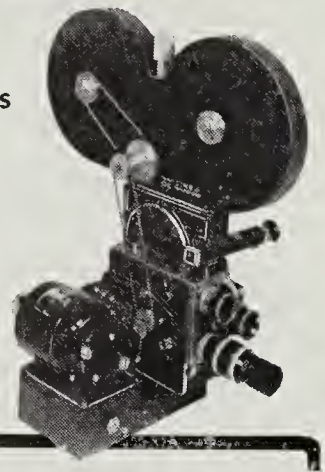
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ordinary and actually painted a canvas by means of his camera. This all-too-rare product is simply the result of the creative and imaginative use of light to enhance the colors and forms inherent in the chosen subject. I once sat through a slide show and was amazed to hear the commentator refer to a few rare transparencies as "mood pictures," as if this were some exceptional category that he had chosen to include in his presentation. In the medium of painting all pic-

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By ARTHUR G. KRIENKE

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ALTHOUGH many excellent devices are available to facilitate camera placement, a serious gap exists, particularly in the non-theatrical film field, where the weight and size of professional camera equipment in severely cramped areas becomes an annoying problem. All too often the producer of narrow gauge films is required to shoot on locations where space is at a premium.

What is necessary, then, is a mobile camera mount capable of supporting a camera at the average working heights; which can be raised or lowered with a minimum effort; rolled about easily; permits moving the camera between laboratory benches and the like; does not clutter floor space; and can pass easily through a 28-inch doorway.

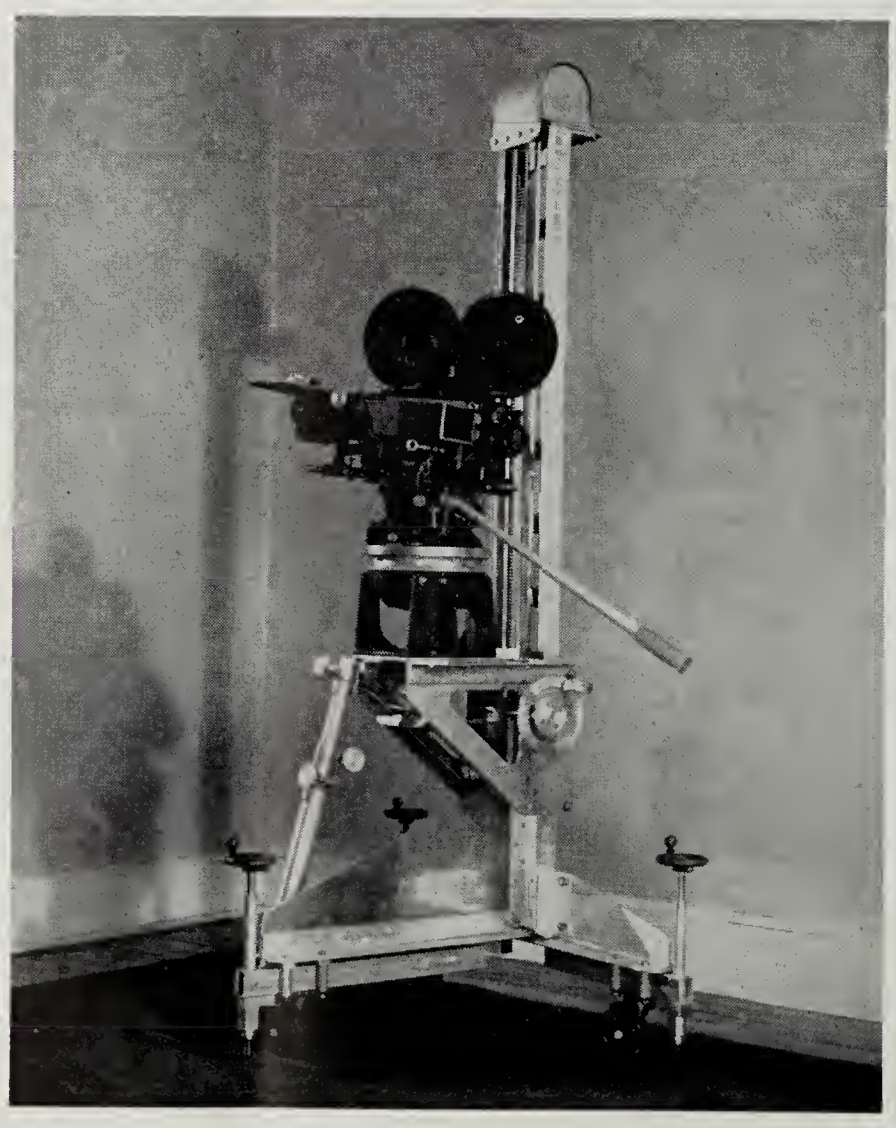
The camera stand pictured below does all of these things. It was constructed to meet these very requirements. It provides lens heights 39½ to 80 inches, although lens heights over 68 inches require more care to avoid unsteadiness.

Ball bearings are used throughout the carriage which operates smooth enough to permit the camera to be elevated during a take. The entire weight of the camera, tripod head, and carriage is supported by spring balances, and a spring-loaded toggle actuates a pivoted section of gear rack to provide a positive lock for the carriage.

The stop screws are extendable to provide greater security at higher camera positions; they may be easily removed to permit movement of the stand through very narrow passages.

Sufficient clearance has been provided between the tripod head and the supporting column to permit panning of the camera through approximately 270 degrees.

The cross of the "T" base may be easily removed to facilitate transportation in a station wagon or small truck. Weight of the entire stand, less camera, tripod head and high hat is 55 lbs.



DESIGNED for industrial film making in tight quarters, this compact mobile camera mount borrows its vertical elevator idea from conventional animation stands, and provides a range of camera heights from 39½ to 80 inches.

tures that deserve the distinction of being called works of art are mood paintings. A painting without that wonderful intangible is a picture without a soul. Again, if we were to select one particular element that unifies all other elements into a specific mood impression, we would have to name light. With the use of light we are able to transform a picture from a mere descriptive mirror held to nature into a mood-evoking interpretation of nature, to transcend superfiicial decoration and prettiness and reach into the realm of beauty.

The next basic pictorial element to be considered in conjunction with light is line. Let us first define the meaning of line. In its simplest sense, it is the contours within which all figures and objects are theoretically contained. In its fullest sense, line is form; that is, mass in light and shadow. Line is also decorative linear pattern, the rhythm of related masses, and direction or thrust. In the motion picture, line is also the progression of movement. The value and meaning of line are determined by its use in conjunction with the other plastic elements — color, space, light and shadow.

Light is the means for delineating the manifold expressions of line in the pictorial unit. All decorative patterns and rhythms, and the character of the line that expresses them, are dependent upon illumination for their definition. It is with light and shadow that we regulate the come and go of contours defining masses — a definition and blending known as lost and found. By the same means we achieve either unification or separation of figures or groups of figures in space.

One of the most dramatic services that light performs in a pictorial sense is that of separating from the various ingredients of a scene those elements that must become predominant from those that play a subordinate role. Thus, one figure can be given dramatic precedence over another, and the setting can be made subsidiary to the individual.

The particular manner in which we utilize light and shadow will determine the character of the line and its resultant mass. The forms may be gently or boldly, monumentally delineated to express the mood inherent in a given scene or an entire motion picture. Thus line and light are combined to produce a form appropriate to the nature and subject of a picture. *(Cont'd on Pg. 566)*

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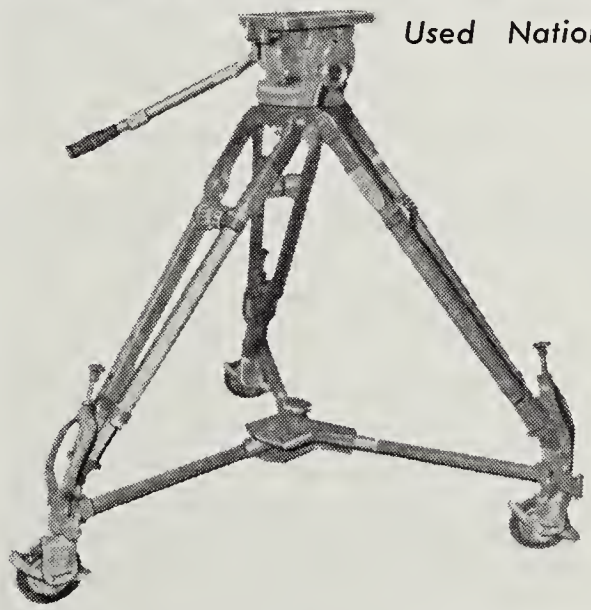
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An extremely important consideration that can be accented only with the controlled use of light and shadow is the quality of line in a given composition —whether it is restful and horizontal or dynamic with either vertical or diagonal direction; whether it is undulating, or rigid, or fiercely staccato, or straight and powerful in thrust. The factor of movement of line and mass in space is, of course, far more complex in the motion picture than in any other pictorial medium. Consequently, the employment of light to define and interpret these progressions and shifting relationships becomes a fine art in itself.

The final basic element in the creation of a picture is space. Since space results from the arrangement of color and mass, and since this arrangement is the function of composition, we will consider space under the heading of composition. The purpose of composition is the final unification of all pictorial elements into an aesthetically satisfying whole. Composition is both two-dimensional and three-dimensional; that is, it is the relationship of pictorial ingredients up and down and from side to side upon a single flat plane, and also backward and forward in deep space.

For achieving relationships in space we must rely to a great degree upon light. Under flat illumination there is little or no depth. For the illusion of deep space, intervals of light, of accent and unaccent, will achieve more than mechanical perspective. One can easily realize the function of light and shadow in establishing the three-dimensional relationships, rhythms, and thrusts that make up space-composition. In order to pull some objects forward and push others back in space we must employ light in conjunction with scale. The use of aerial perspective—that natural phenomenon by which distant objects are rendered less distinct by a degree of haziness—was one of the most significant discoveries in the development of realism in painting. This atmospheric quality is light functioning to keep objects on their proper plane, and should be understood as such by the photographer who tends to demand that all elements of a picture be equally sharp. Incisiveness and atmospheric diffusion are of equal value when creatively employed to produce a style most appropriate to the character and mood of a selected subject.

The final result of a successful composition in a painting is balance, ranging from the conventional to the unusual. This is equally true in the motion picture; but because of its unique kinetic nature it is capable of radical departures or apparent violations without loss of over-all balance. Deliberate un-balance for dramatic emphasis can be safely utilized in the motion picture, for here we are dealing with continuity of movement where all balance need not be contained within a single frame, but can find its ultimate resolution in subsequent frames. It is possible to achieve such an effect with one or more plastic means, and in an especially dramatic fashion with light alone.

In all the various categories of composition and their variations light performs an incontestable function. The procedure is to select the composition most suitable to express a given scene, or determine the compositional pattern to which a landscape most naturally conforms. then either to arrange the illumination or wait for the proper natural light that will best define the selected composition.

The compositional significance of light is two-fold. It operates as an individual plastic unit capable of functioning as a design element in itself, and it is a means for integrating all other plastic elements into a unified compositional whole.

In design, as in drama, there are two important principles—rhythm and contrast. First there is the rhythm of likes —color with color, line with line, mass with mass, light with light. Then there is the rhythm of dissimilar elements. It is the function of light to define all these individual rhythms and bring them into effective relationship with other rhythms. In the creation of contrast, light operates with shadow to produce that chiaroscuro that is so powerful in the paintings of Rembrandt, in the theater. and on the screen. Since the principle of all contrast is a combination of variety with unity, it is the prime function of light in the motion picture to develop pictorial and dramatic variety within the pictorial and dramatic unity so essential to a complete work of creative cinematography.

It has been said that light is to a picture what the tenor is to an opera. That it becomes the visual focus point in a picture is certainly true. It is the determining factor in pictorial mood. Set in the key dictated by the mood requirements of the film, it is used throughout in conjunction with all other plastic means to sustain and reinforce in visual, as well as dramatic, terms the predominant mood of the motion picture.

SHOOTING COLOR FILM UNDERGROUND

(Continued from Page 537)

threatened to ruin the microphone. or there were echoes so powerful that they rendered the original sound ineffectual. It required a great deal of testing. of placing of microphones, and choosing the right type of blasts to obtain acceptable recordings.

Moving around the mine from one location to another involved loading our gear into large foot lockers, piling it into ore cars, rustling up an engineer with engine to pull the cars, then traveling down miles of narrow-gauge track to the main shaft. Here we'd unload the equipment. put it on a cage. and then move up or down to the next level. After shooting was completed. we went through the whole operation again—in reverse. And all the time there was the incessant dripping of water from the ceilings. cold drafts and hot drafts, dust, water, blast smoke and humidity.

The shooting script called for footage of the new underground shaft that is being drilled by the company as part of a multi-million dollar expansion project to locate new ore. At the time, the shaft had been extended to 5,460 feet below the ground level of the city of Lead. Our crew and equipment descended by mine cage to the 4850-foot level. then traveled a mile via the mine's narrow-gauge railway to the edge of the new shaft. Here lights, cameras and other equipment were placed on another cage and lowered to within 60 feet of the bottom of the new shaft. At this depth, moisture condensation became a serious problem. The cool air that prevailed caused camera lenses to fog badly. In subsequent shooting, we avoided this by storing the cameras overnight in a power-substation at the 4850-foot level. This conditioned them against sudden humidity changes.

To get enough photographic light at the scene of shooting, two Senior floods and two spots were lowered by ropes and suspended just out of camera range. The cables were plugged into the Colortran Converters, which were turned up as high as they would go. Max Howe, riding the ore bucket, descended to the bottom of the shaft to take a light reading; he decided to shoot at f/1.4 with a wide-angle lens, with the illumination reading 3500 degrees K. (He felt that the excess blue that would result in the color film would add a striking pic-

(Continued on Page 568)

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(Continued on Next Page)

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(Continued from Preceding Page)

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Send ad copy accompanied by remittance to cover payment to American Cinematographer, 1782 No. Orange Drive, Hollywood 28, Calif. Closing date for copy is 15th of month preceding issue date.

SHOOTING COLOR FILM

(Continued from Page 566)

torial effect to the rugged rock surfaces.)

Howe made the shot while roped to a plank set on the steel bridging, and with the camera tied securely to a steel girder. The 200 volts fed to the lamps burned them all out in about three minutes. but that was all the time Howe needed to get the scenes on film.

Fourteen days and 2500 feet of film after shooting first began, the assignment was completed and our equipment hoisted to the surface for transportation back to the studio. The cold light of the outside world clearly showed the deterioration that our equipment had suffered while in the depths of the mine. Everything that was made of iron or steel or had these metals in their structure was badly rusted. Everything made of aluminum, such as lamp reflectors, etc., was bent and scratched; light cables were water-logged; and there was mud and rock dust in everything. Only our cameras came through the ordeal relatively undamaged, due to the meticulous daily servicing and inspection that was given them.

The Forney Films' crew to a man now consider themselves something in the way of specialists, both as miners and film makers. The job was a fascinating one—and a valuable experience even for veterans in the field of industrial movies.

NEW BLIMP

(Continued from Page 540)

ported by rubber bumpers. This operation takes but a minute and requires no tools.

The outstanding feature of the Arriflex camera—that which permits sighting and focusing through the taking lens, even while the camera is running, is unhampered by addition of the blimp. This is accomplished by means of an ingenious optical system, which utilizes the detachable eyepiece of the camera on the outside of the blimp. A roof prism "elbow" for the optical system of the camera cover, is included with the blimp. Incidentally, Arriflex 16 cameras made before 1956, which do not have the divisible eyepieces, cannot be used with the new blimp.

Follow-focus control is maintained from the outside of the blimp at two different positions: 1) at the rear of camera, permitting the cameraman himself to operate it; and 2), at a point near the left front side of the blimp, beneath the large window, through which the lens focusing scales are visible. and usually handled by an assistant. The lens in taking position is easily coupled to the exterior focusing mechanism by simply engaging a rubber-covered finger between the follow-focus grips of the lens. Thus the camera lenses need not be provided with external gears. as is customary with other blimps. In fact, nothing at all is changed or disturbed on the camera itself when used with the blimp.

An adjustable bellows-type leather mattebox protects the front window from oblique light, which might cause unwanted reflections reaching the taking lens.

When the Arriflex 16 camera is utilized with the blimp, a geared footage counter must be attached to the motor. A small window at rear of the blimp permits observation of this counter and another shows the tachometer.

Three small lamps are provided inside the blimp to illuminate the controls. Two are always "on" when blimp is connected and these illuminate the geared footage counter and tachometer. The third lamp, mounted above the camera turret, is only "on" when pressure switch on front outside of camera is depressed.

There is a pulsating pilot light located over the finder tube, and this continues to flash as long as the camera is running.

A protected ON-OFF switch and a six-contact power receptacle are flush-mounted on the rear of the blimp. A tape-measure hook is also provided in the exact focal plane of the camera. While completely unnecessary with the Arriflex 16 camera—it is so much easier to focus the lens critically on the bright groundglass lens with its 10-X magnification — this tape-measure hook is a concession to long-established cinematographic practice.

Total weight of the Arri 16 blimp with matte box is 55 pounds. With camera, three lenses, sync motor, and 400-ft. magazine with torque motor the net weight is 70 pounds. It is scheduled to be displayed at the forthcoming SMPTE convention in Los Angeles next month.

The Motion Picture Association of America reports that the proportion of color films to all films made in the U. S. during 1955 dropped for the first time since color first became a factor in feature film production.

Report shows that there were 154 color features produced last year, or 50.5% of a total of 305 pictures that received the Production Code Seal. In 1954, there were 176 color films, or 58.1%—an all-time high for the industry.

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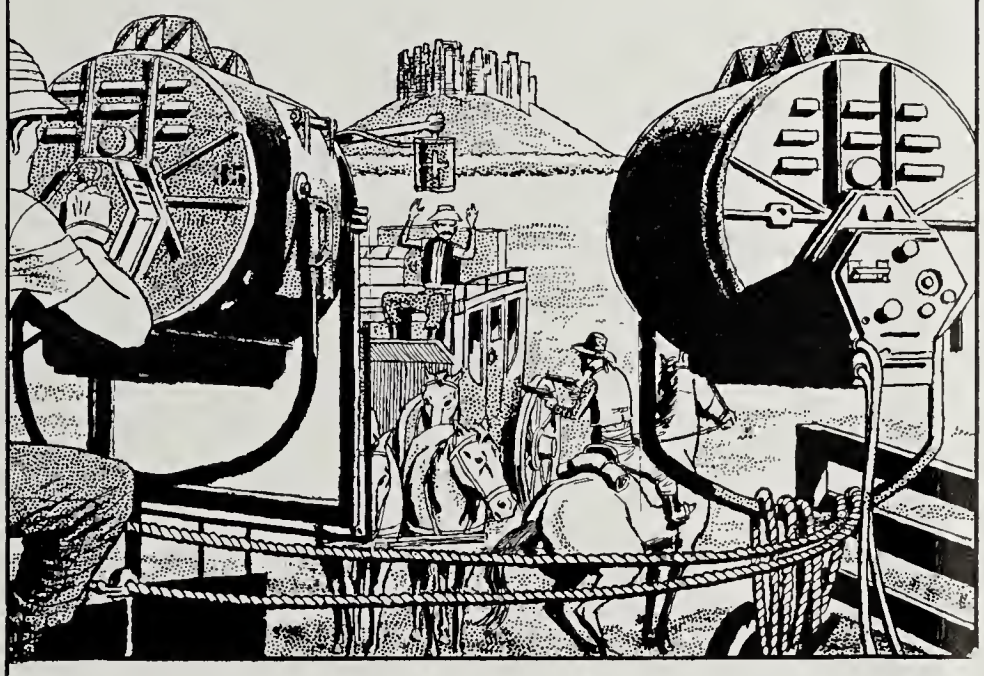
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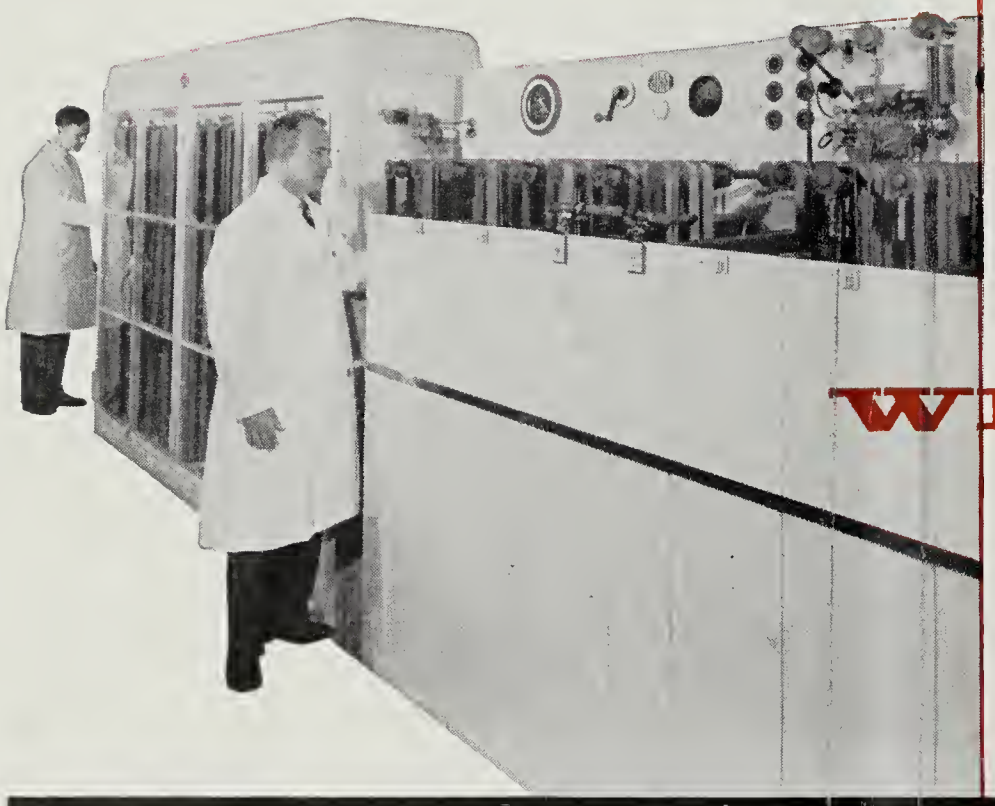
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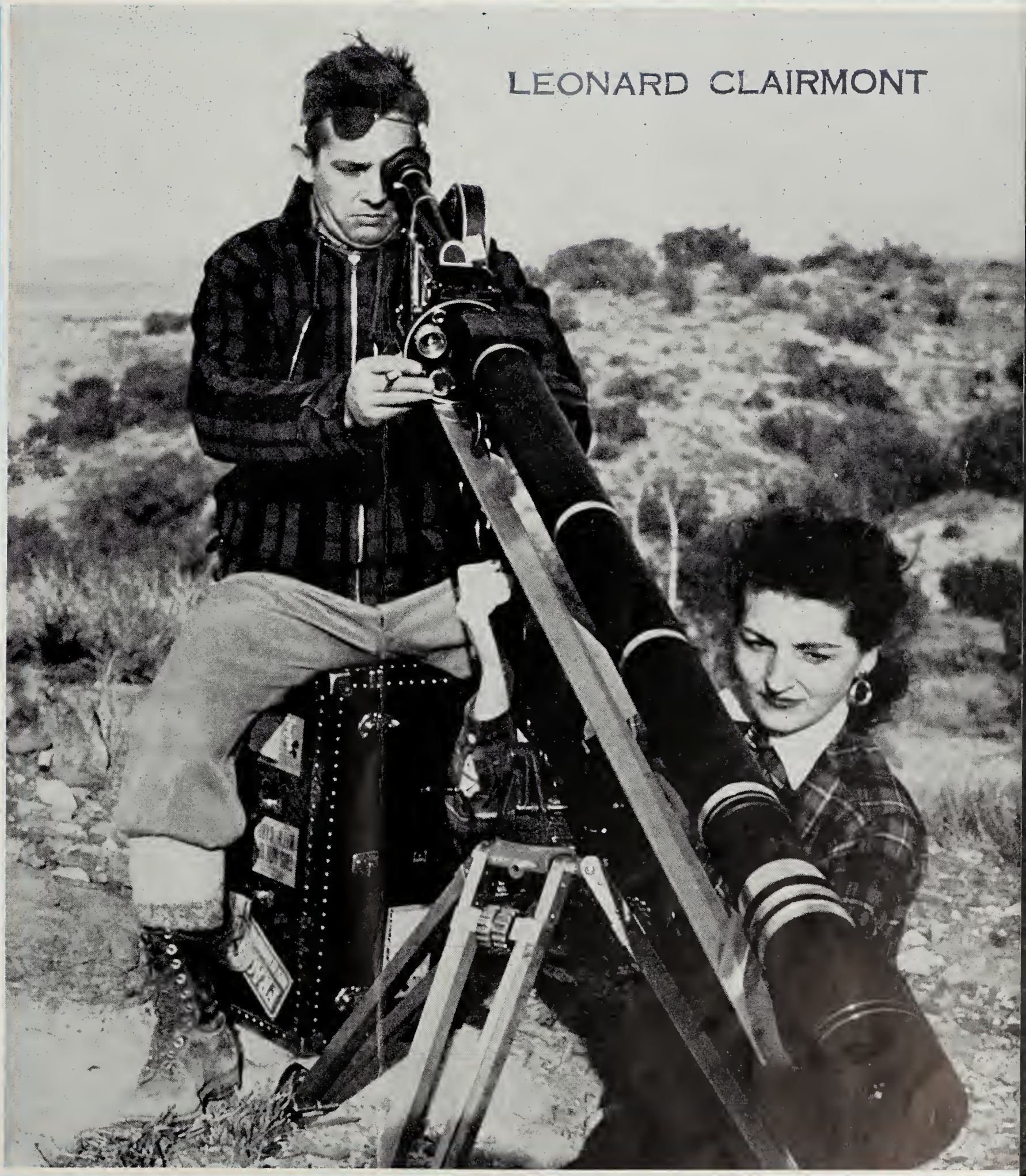
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OCTOBER • 1956

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

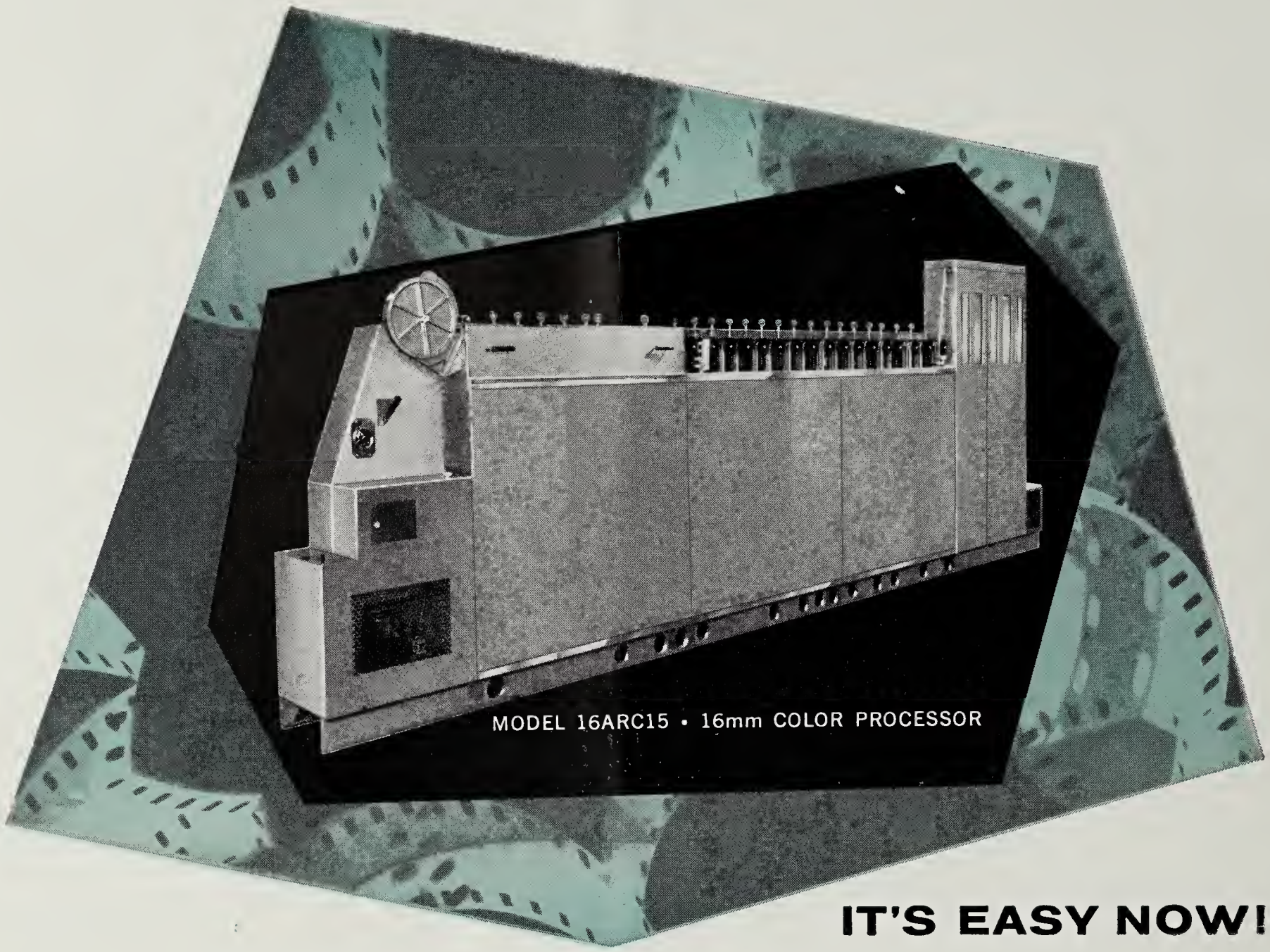


In This Issue . . .

- The Idea Is the Foundation of the Film
- Method for Syncing the Pre-scored Playback
- Time-lapse and Telephotos Probe Nature's Secrets

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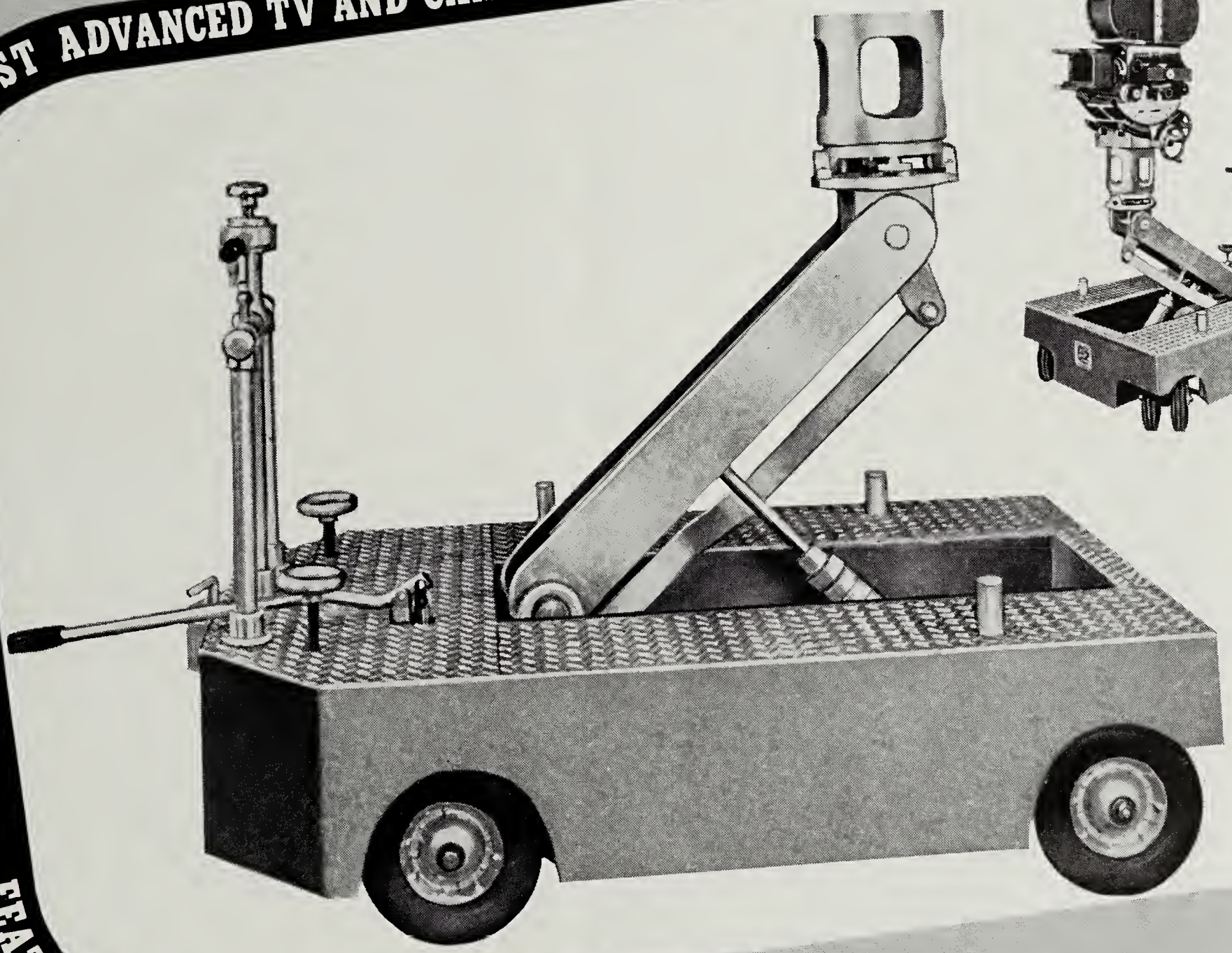
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AMERICAN

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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EDITORIAL ADVISORY BOARD: Arthur C. Miller, Ray Rennahan, Arthur Edeson, Walter Strenge, Joseph Biroc.

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ON THE COVER

ASSISTED by his attractive wife, naturalist-photographer Robert Crandall uses a Cine-Special with a 16-inch focal length telephoto lens on giant extension tube to film a close shot of an ant colony in the desert for a scene in Walt Disney's True Life Adventure feature, "Secrets of Life."

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBCRIPTIONS: United States and Canada, $4.00 per year; Foreign, including Pan-American Union, $5.00 per year. Single copies 35 cents; back numbers 40 cents; foreign single copies, 40 cents; back numbers, 45 cents. Advertising rates on application. Copyright 1956 by A. S. C. Agency, Inc.



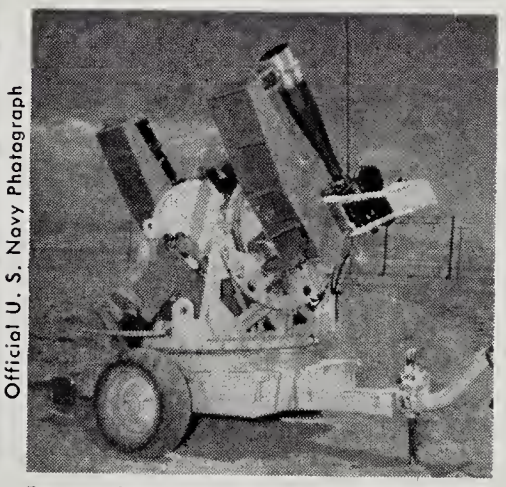
Multiple Mitchell Cameras on Mobile Turret at U. S. Naval Air Missile Test Center, Point Mugu, Calif. Seventeen 35mm and five 16mm Mitchells are used here.

CAMERA BECOMES BASIC RESEARCH TOOL



Official U. S. Army Photograph

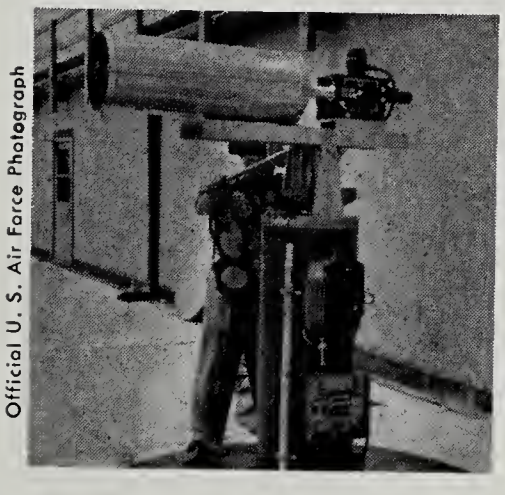
200 Mitchell Cameras, mastly high-speed models, are in use here at White Sands Praving Graund, New Mexica.



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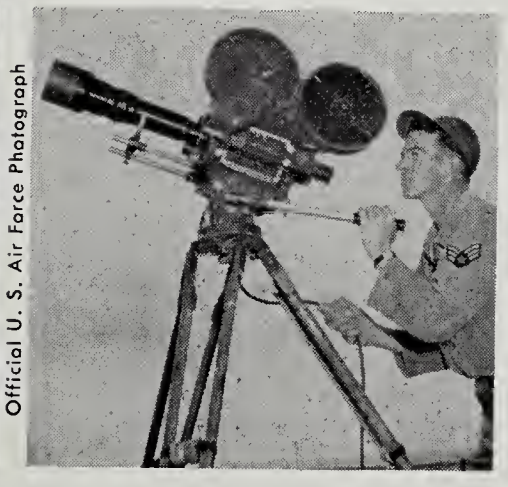
Powered Tracking Mount has Mitchell Cameras; aver 50 Mitchells are used at U.S. Naval Ordnance Test Statian, Inyakern, Calif.

Mitchell Telephoto Tracking Camera in use at Air Force Missile Test Center, Cape Canaveral, Florida.



Official U. S. Air Force Photograph

One of 12 Mitchell cameras used ta track missiles at Hallaman Air Develapment Center, Alamagarda, New Mexica.



Official U. S. Air Force Photograph

Vital Projects Now Heavy Users of Motion Picture Cameras With Flexible Performance Range

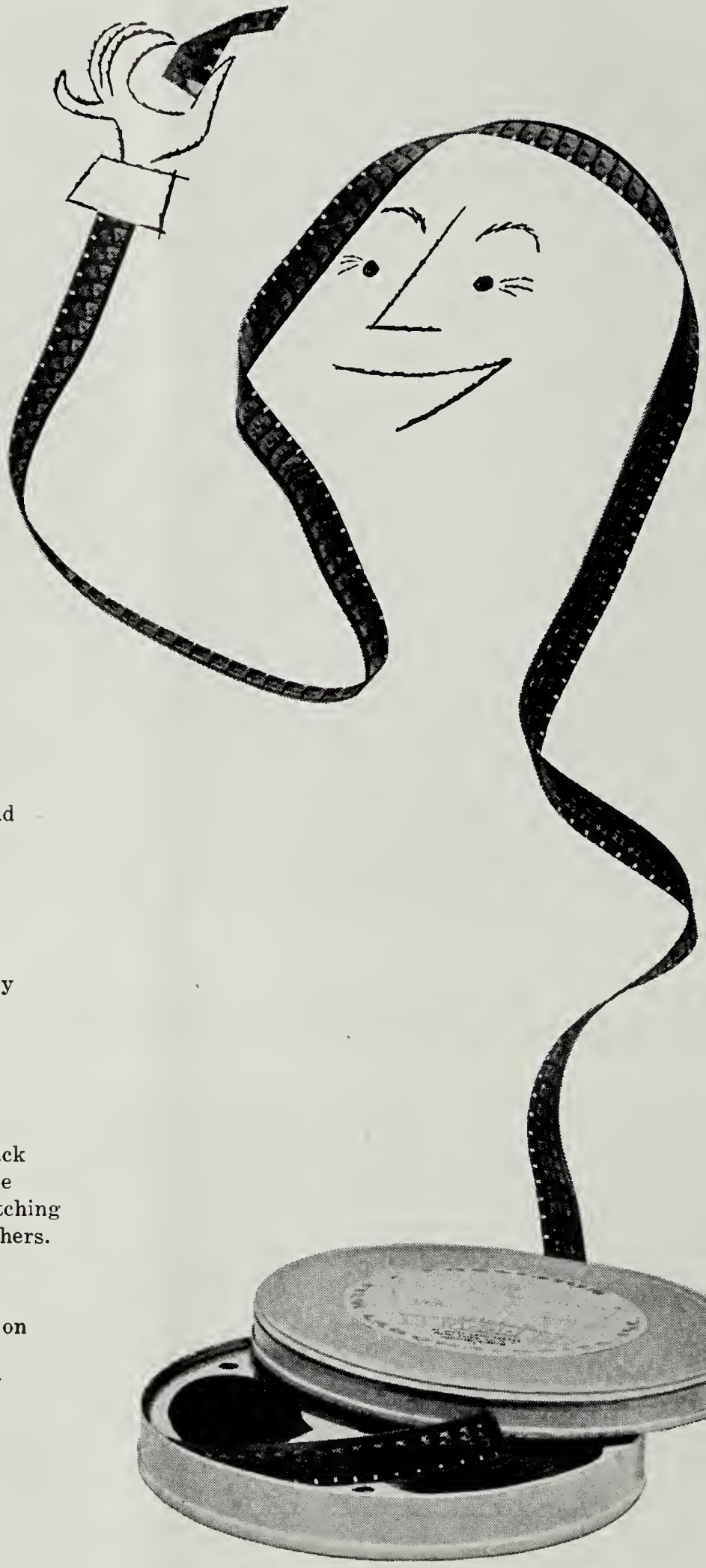
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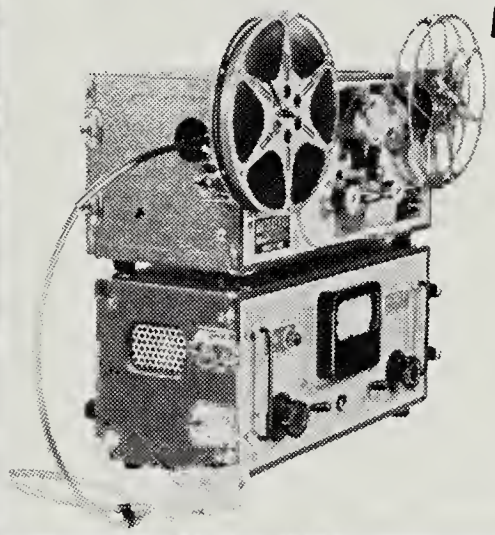
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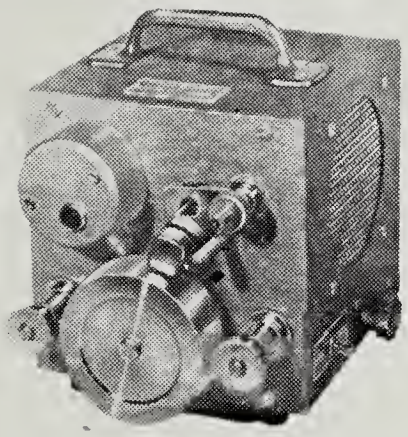


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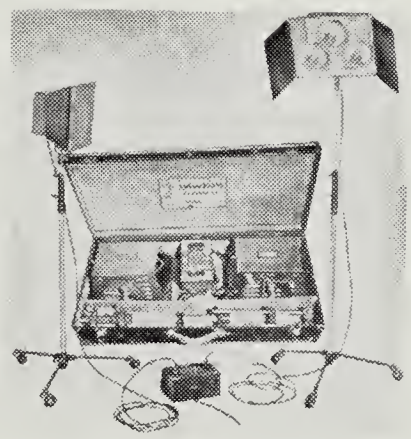
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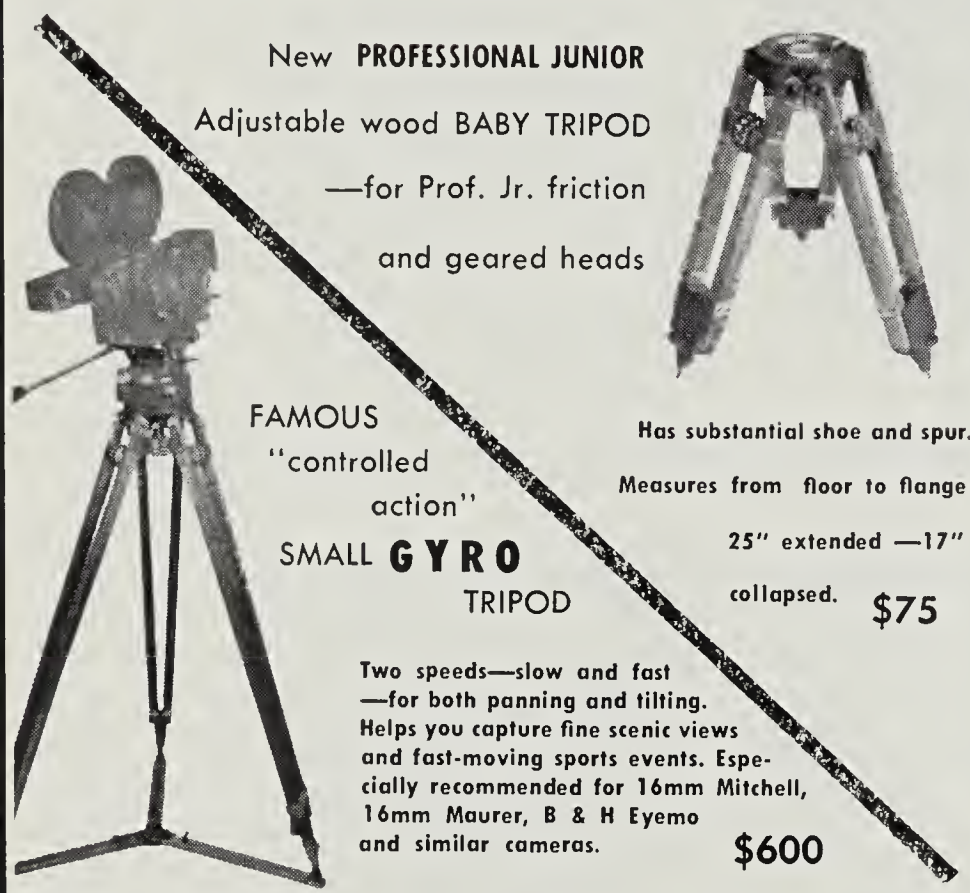


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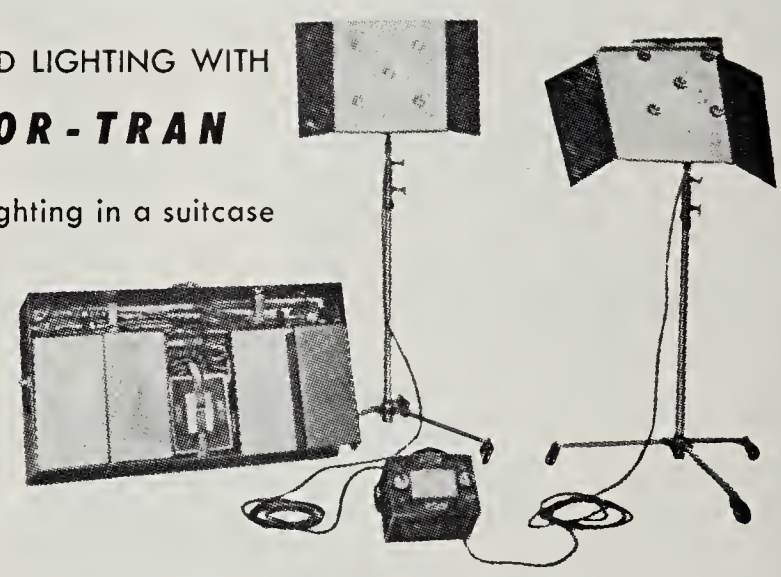
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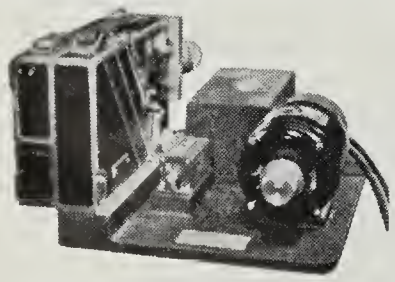


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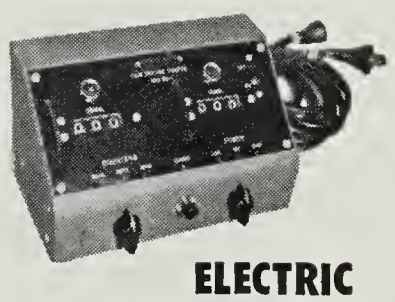
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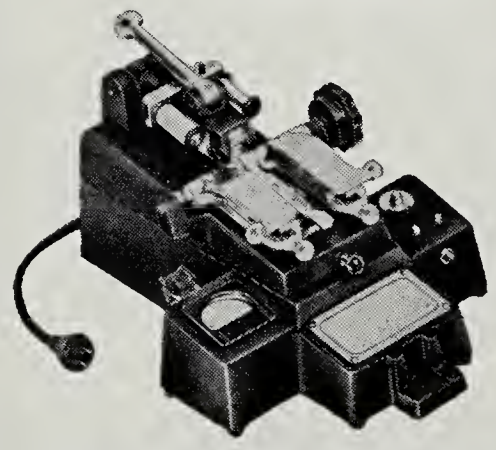


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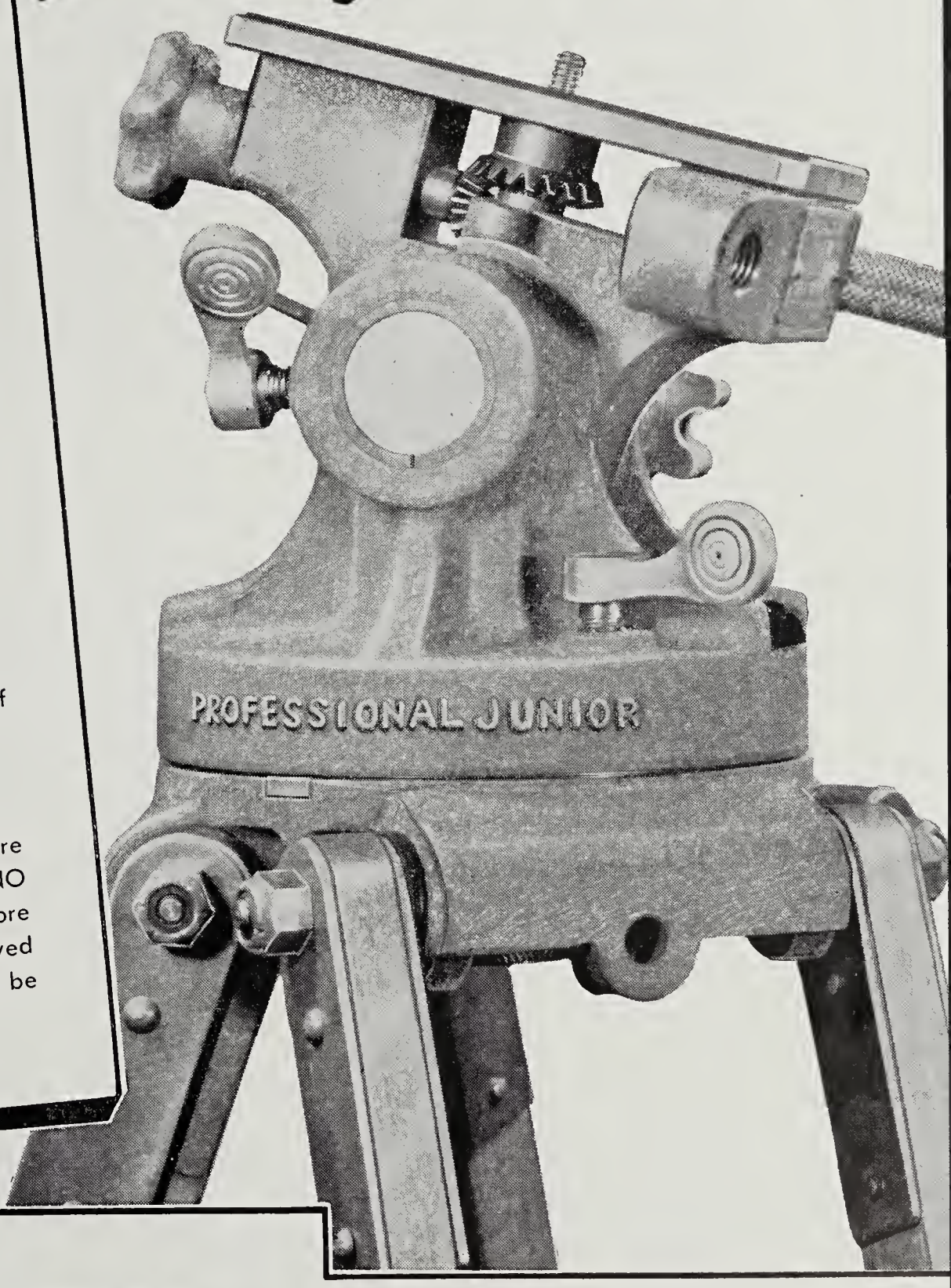
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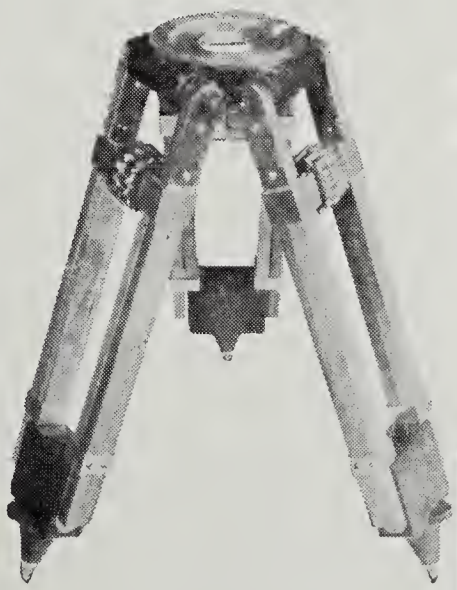




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GEARED HEAD

interchangeable with Friction Head on same tripod.



New Professional Junior Adjustable wood

BABY TRIPOD

—for friction and geared Heads

Has substantial shoe and spur.

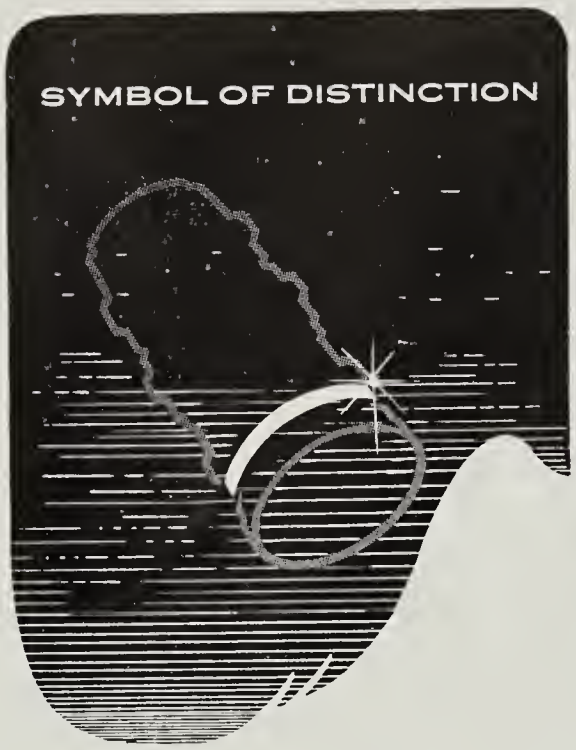
Measures from floor to flange 25" extended—17" collapsed.

High-Hat Low Mount Available

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News briefs about the A.S.C. its members, and important industry personalities



GEORGE FOLSEY, ASC
Twenty-four years at MGM

George Folsey, ASC president, who for twenty-four years has been one of Metro-Goldwyn-Mayer's top directors of photography, was re-signed to a new term contract by that studio last month. Coincidentally, he was handed the assignment to photograph MGM's "Painted Veil," to be filmed in the Orient, and flew to Hong Kong October 5th to scout locations and prepare for production shooting. Assignment marks Folsey's first photographic chore outside the United States.

• • •

Sidney Lund, ASC, head of the Camera Department at Universal-International, reports that studio will shoot all future black-and-white productions in CinemaScope, beginning October 1st.

• • •

Hal Mohr, ASC, was engaged by Du Mont to direct the photography of the initial Hollywood demonstration of its Electronicam video-film camera system, (described in *American Cinematographer*, May, 1955, issue), which took place October 1st at the Paramount-Sunset studio. Invited to the demonstration were members of the Screen Directors' Guild, Screen Producers' Guild, American Society of Cinematographers, producers of television films and the general press.

The system was used last season by Jackie Gleason in putting his half-hour "Honeymooners" TV show on film. Du Mont seeks to interest both feature and TV film producers in Hollywood in the equipment, salient feature of which is its electronic viewing system.

• • •

John MacBurnie, ASC, a director of photography at Republic Studios for the past twenty years, died of a heart attack September 24. For the past three years he has photographed most of Revue Productions' TV film series, which are produced on the Republic lot.

• • •

Jackson J. Rose, ASC, veteran cinematographer whose start in the business dated back nearly 40 years, passed away in Hollywood's Cedars of Lebanon Hospital September 23, following a lingering illness.

Rose began his association with the film industry as a cameraman for the old Essanay Company, which produced the popular Broncho Billy Anderson thrillers. He came to Hollywood in the early 20's and joined the old Metro Pictures Corp., and when that company was merged and made a part of Metro-Goldwyn-Mayer, Rose moved to the Culver City lot. Retiring a few years later. Rose devoted all his time to editing and publishing the American Cinematographer Handbook.



Jackson Rose

He had been a member of the American Society of Cinematographers since its inception and over the years was active in its management.

• • •

The ASC last month elected the following cinematographers to active membership:

Torben Johnke, New York City, who has been a free-lance cameraman in the New York area since 1948.

Mr. Jess Kizis, also of New York, who has specialized in photography of sports events, hasn't missed a World's Series or Kentucky Derby since 1927.

Ralph Woolsey, Van Nuys, Calif., a free-lance cameraman since 1947, now actively engaged with Wide World Pictures, Hollywood. He has also served on the faculty of the Cinema Dept., at University of Southern California.



NBC Cameraman "BILL" HARTIGAN films...

Operation DEEPFREEZE

with AURICON PRO-600 16mm Sound-On-Film Camera!

NBC

WILLIAM B. HARTIGAN, NBC'S Television News Cameraman, interviewed on his return from the frozen continent of Antarctica, said he filmed 52,000 feet of Auricon Sound-On-Film in color near the South Pole, with "Operation Deepfreeze."

TWENTY-FIVE BELOW ZERO, and blinding 100 mile-per-hour winds were the challenging climatic conditions hurled at Cameraman and Sound-camera on this desolate, ice-covered continent at the bottom of the world.

HARTIGAN'S AURICON SOUND FILMS were the first pictures of any kind to be flown to the waiting press and television news broadcasters, telling of the hazardous life led by courageous explorers on Antarctica.

"SUCCESSFUL PERFORMANCE under rigorous below-zero conditions," is the praise Hartigan gives his "Auricon Pro-600." Even after his Auricon was accidentally submerged in water, the Camera was dried out and operated normally.

AURICON DEPENDABILITY on "Operation Deepfreeze" is another example of how Cameramen all over the world rely on Auricon for professional picture and sound-track in the production of Television Newsreels, as well as Film Commercials, Dramatic Inserts, and local Sound-Film programming.

AURICON CAMERAS are sold with a 30-day money-back guarantee. You must be satisfied! Write for free illustrated Auricon Catalog to BERNDT-BACH, INC., 6902 Romaine Street, Hollywood 38, California. Phone HOllywood 2-0931.



MR. J. A. TANNEY, (left), President of S.O.S. Cinema Supply Corp., New York City, who supplied the Auricon Equipment and Accessories for "Operation Deepfreeze," discusses with NBC's William B. Hartigan the successful below-zero performance of the "Auricon Pro-600" Sound-On-Film Recording Camera.

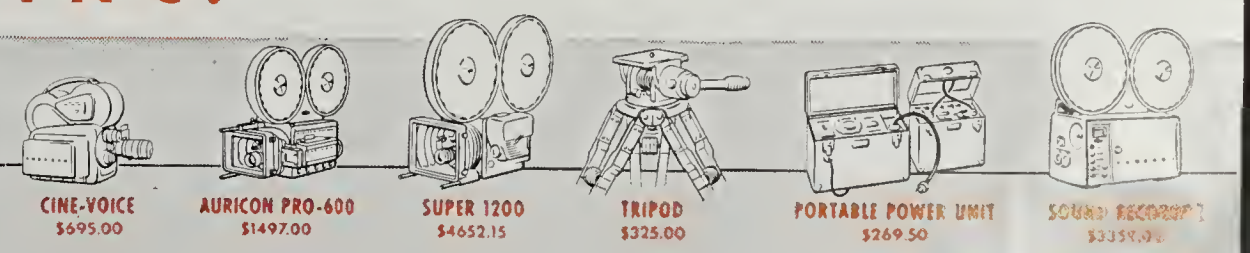
AURICON

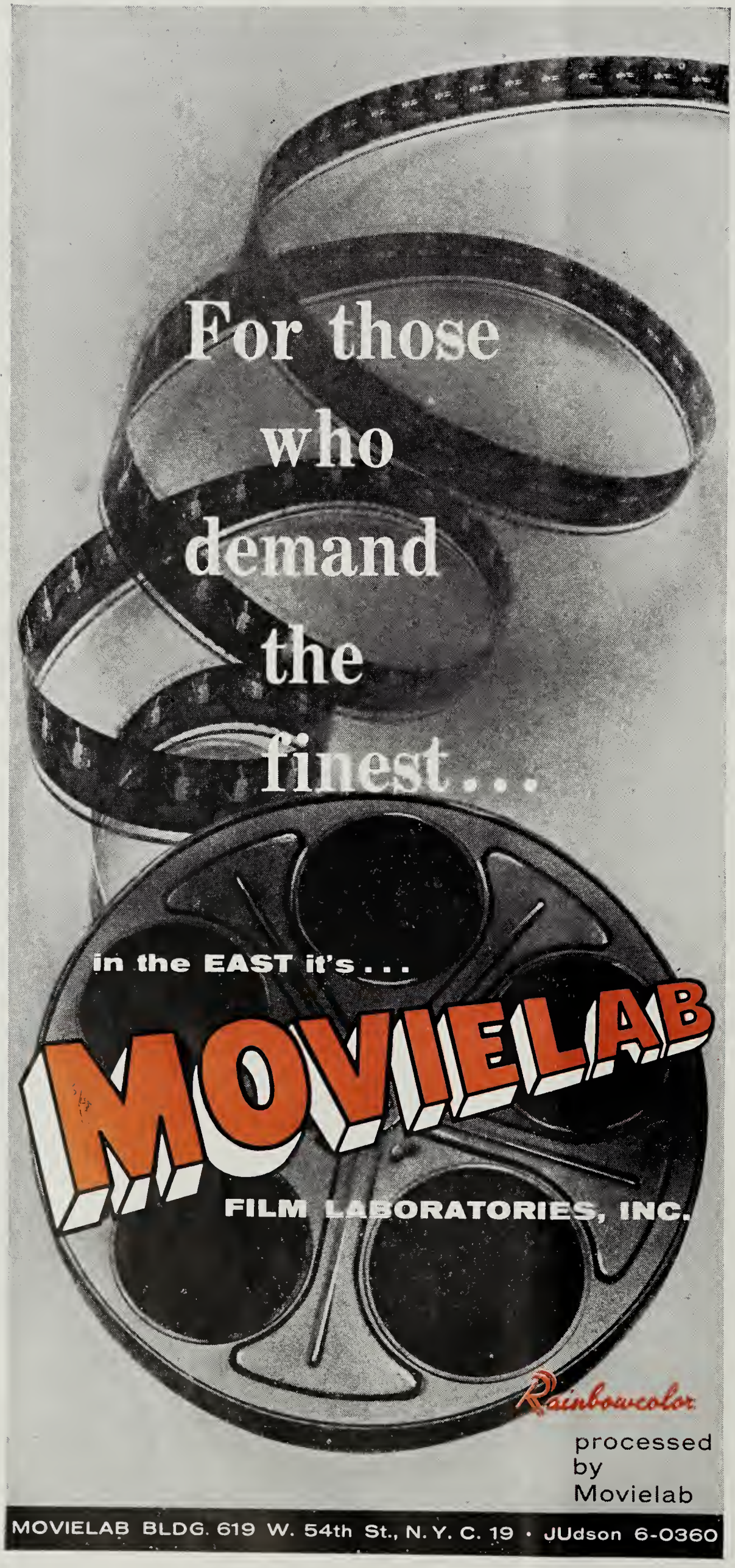
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WHAT'S NEW

In Equipment, Accessories, Services

Split-Apart Reels

A fast, inexpensive method of winding film from reels to cores, or from one core to another, is provided by the new CECO Aluminum Split-Apart Reels, available from Camera Equipment Co., 315 West 43rd Street, New York, N. Y.

Reels are available in 16mm and 17½mm sizes in capacities of 400 and 1200 feet, and 1000-foot 35mm reels. Prices range from $4.20 to $7.50.

New 8mm Projector

A new model of the Monterey 8mm movie projector (the model 253-AR DeLuxe with reverse and still picture operation) has been announced by Bell & Howell Co., Chicago, Ill.

New model is similar to original Monterey projector with the addition of a reverse and still picture control. A safety shutter protects film from heat during still picture projection. Because of the fixed-axis framing feature, it is unnecessary to re-adjust the tilt when framing.

List price is $99.95, which includes Federal excise tax.

Mark IX Recorder

Magnasync Mfg. Co., Ltd., North Hollywood, announces availability of its latest improved magnetic recorder—the Mark IX Magnaphonic, which is scheduled to be demonstrated at the S.M.P.T.E. Convention in Los Angeles this month.

The Mark IX is a synchronous magnetic film system which features a remote control box through which the entire system may be push-button operated, and which also incorporates a footage counter, and switching controls for amplifier and motor. The portable cases are light, sturdy, aluminum alloy.

Animation Stand

A new, low-cost animation stand, trade-named the Tel-Animastand, is announced by S.O.S. Cinema Supply Corp.

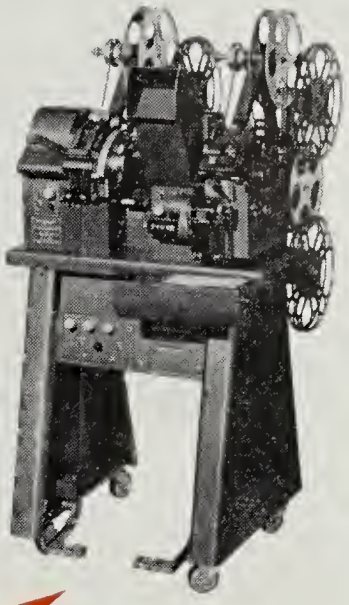
Equipment is ideal for production of Cartoons, titles and special effects by TV stations, small film producers and educational institutions.

Any 16mm or 35mm camera may be mounted on its movable, counter-balanced vertical carriage. Compound table

(Continued on Page 630)

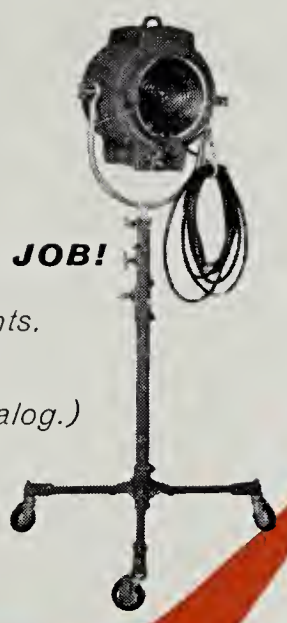
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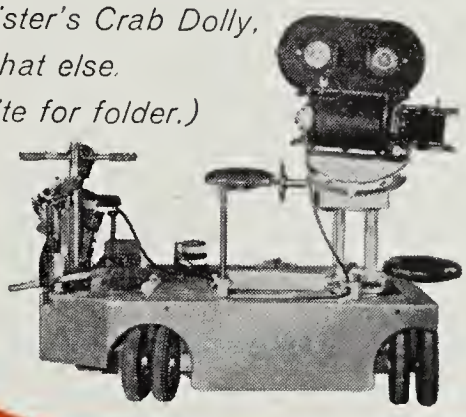
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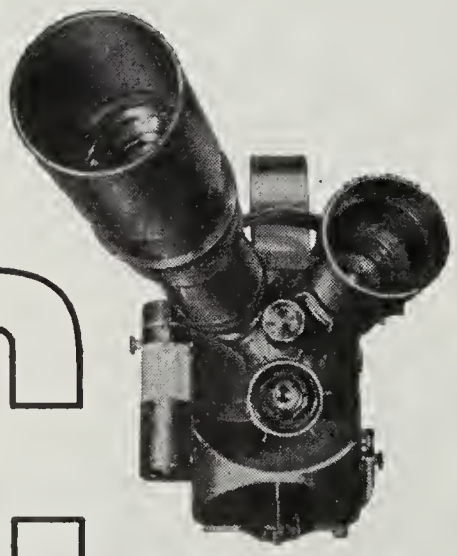
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TECHNICAL QUESTIONS & ANSWERS



Conducted by Walter Strenge, A.S.C.

QUESTIONS relating to cinematography or other phases of film production are invited from readers and will be answered by letter by Walter Strenge or by other qualified members of the American Society of Cinematographers. Questions and answers considered of general interest will appear in this column.—*Ed.*

Q I am often confronted with the problem of using a telephoto lens to capture closeups of wildlife, then following these closeups with shots at closer range, using the same lens. This I am unable to do, however, because the lens focusing mount will not extend the distance required. I don't want to use a larger tele lens because such lenses are usually too slow for color photography. Lens extension tubes also diminish the effective aperture. Would a portra lens solve my problem?—*L.M.S., Lansing, Mich.*

A portra lens might be the right answer. You may find, however, that an achromatized auxiliary lens may be necessary. I have used this technique with very satisfactory results.—*Winton Hoch, A.S.C.*

Q In the 20th Century-Fox picture, "Rains of Ranchipur," how were those scenes produced that show the waves of water engulfing the streets, with people being overrun and inundated by the gigantic flood of water? These scenes appeared to be not medium shots or closeups, nor made by rear projection or process, but long shots of entire streets. —*J.J., Detroit, Mich.*

The scenes referred to were made by the traveling matt technique. By this method, a moving object (in this case, the wall of water) is separated from its background and composited with another scene (in this case the street crowded with terrified people).

Actually a great deal of pre-planning was necessary in order to make everything come out right. It was necessary to build a miniature set that conformed exactly with the full-size street. Thus, we were able to keep the water currents, its direction of flow and its form compatible with the characteristics of the full-scale street.

The miniature street set had to be photographed from the same identical angle as was the footage shot on the full-scale street; and the flow of water on the miniature set was shot at high camera speed so that its movement and general characteristics would approximate that of moving water shot in full scale.

After the full scale scenes showing the people running and reacting to the imaginary flood waters were filmed, they were combined in the laboratory with the scenes shot in miniature. Here the important third step took place—that of matte painting. The full-scale street used had many modernistic buildings that were inappropriate to the story locale. These were matted out in the film and new structures painted and double-exposed into the finished shot.

There are several methods by which traveling mattes are made. All are much too complicated to describe in detail here.—*Ray Kellog, Head, Special Photographic Effects, 20th Century-Fox.*

Q Realizing that the Japanese have to date far excelled other countries in artistic achievement of color use in their theatrical films, is there any explanation as to their successful techniques? To what extent are filters responsible for the effects that appear extraordinarily superb in Japanese color films What else do the Japanese utilize along with filters? Why this superiority to American cinematography?—*R.A.P., New York, N.Y.*

It is impossible to answer a question that is not a question at all but a statement expressing the reader's personal opinion about Japanese cinematography. Inasmuch as the appreciation of any art form—be it color photography, chiaroscura, oil painting, sculpture, etc.—is a matter of one's individual taste, reader R.A.P. is privileged to manifest his opinion. However, if he will honestly review the achievements of American directors of photography—achievements resulting from many years research and experiment—he will realize the effrontery of his alleged query.—*Leon Shamroy, A.S.C.*

R.A.P.'s statements (questions?) find no support among professional cinematographers in Hollywood. Nor does the vote of the Academy of Motion Picture Arts and Sceinces, which annually awards "Oscars" for outstanding achievement in motion picture photography, support his claims.

As he failed to name the Japanese pro-

(*Continued on Page 621*)



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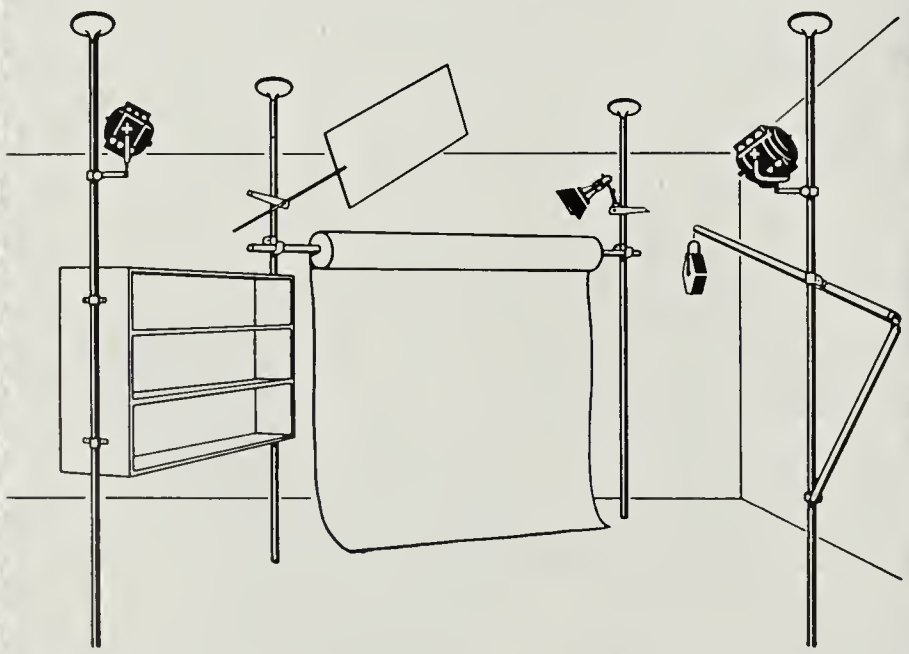
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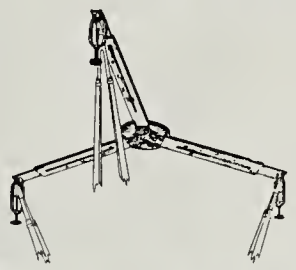
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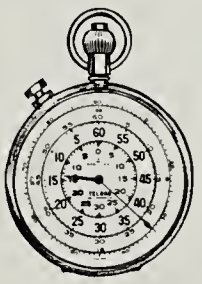


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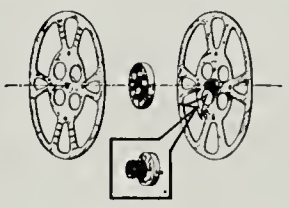


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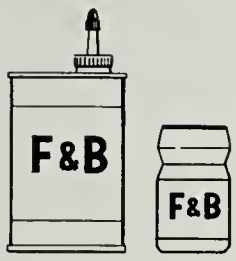
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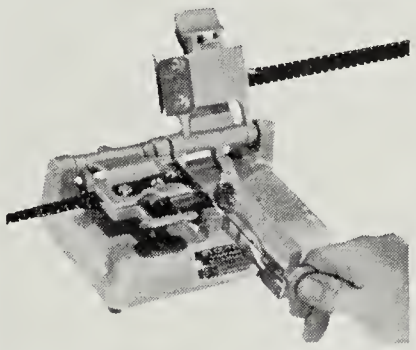
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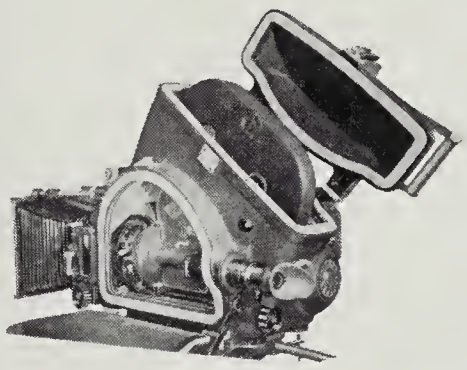
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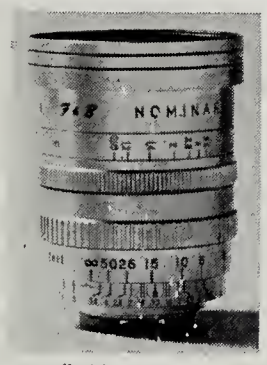
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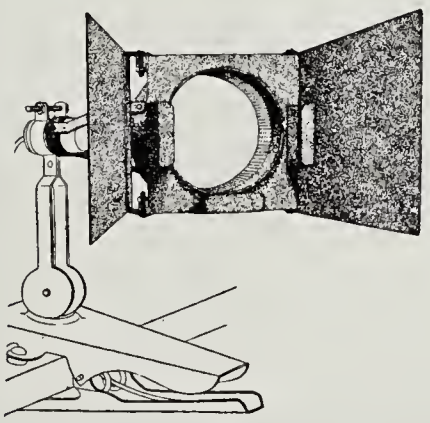
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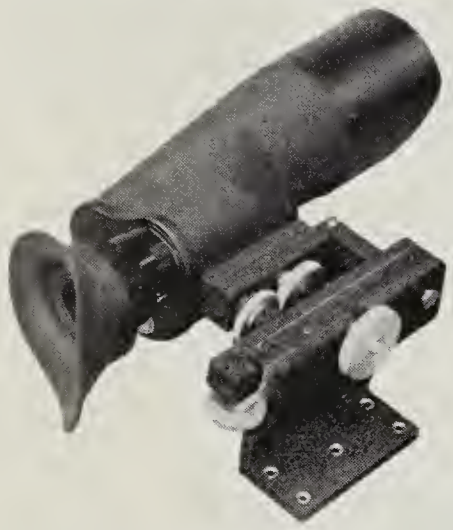
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Photographic Assignments

SEPTEMBER • 1956

Who, where and what the industry's cameramen were shooting last month.

Asterisks indicate television film productions.

ALLIED ARTISTS

• William Mellor, ASC, "Love in the Afternoon," (shooting in Paris) with Gary Cooper, Audrey Hepburn and Maurice Chevalier. Billy Wilder, producer-director.

AMERICAN NATIONAL

• Monroe Askins, "West Point Story,"* (Ziv-TV) John Shelton, director; "Dr. Christian,"* (Ziv-TV). Paul Gilfole, director; "Highway Patrol,"* (Ziv-TV) with Broderick Crawford. Eddie Davis, director.

• Bob Hoffman, "Science Fiction Theatre,"* (Ziv-TV) Eddie Davis, director; "Highway Patrol,"* (Ziv-TV) with Broderick Crawford. Herb Strock, director; "Dr. Christian,"* (Ziv-TV) Paul Gilfole, director.

• Curt Fetters, "Science Fiction Theatre,"* (Ziv-TV) Eddie Davis, director; "Dr. Christian,"* (Ziv-Tv) Henry Kesler, director; "Highway Patrol,"* (Ziv-TV) with Broderick Crawford. Lew Landers, director.

CALIFORNIA STUDIOS

• Hal McAlpin, "O. Henry Playhouse,"* (Gross-Krasne, Inc.) with Thomas Mitchell. Peter Godrey and Barney Girard, directors; "Dr. Hudson's Secret Journal,"* (Wesmor, Inc.) with John Howard. Peter Godfrey, director.

• Lucien Andriot, ASC, "The Life of Riley,"* with William Bendix. Abby Berlin, director.

• Lester Shorr, ASC, "Adventures of Hiram Holliday,"* (Gross-Krasne Inc.) with Wally Cox. Philip Rapp, director.

• Kenneth Peach, ASC, "Matinee Theatre,"* (Gross-Krasne Inc.) Albert McCleery, director.

CARTHAY SOUND STAGE

• William Whitley, ASC, "The Lone Ranger," *, with Clayton Moore and J. Silverheels. Earl Bellamy, director.

• Gil Warrenton, ASC, "The Hanging Judge," with Willard Parker and Mara Corday. Edward Drew, director.

COLUMBIA

• Desmond Dickenson, "Fire Down Below," (Warwick Prod. shooting in Trinidad) with Rita Hayworth, Robert Mitchum and Jack Lemmon. Robert Parrish, director.

• Gert Andersen, ASC, "Ford Theatre,"* (Screen Gems). James Nilsen, director.

• Basil Emmott, "Town On Trial," (Marksman Films shooting in London), with John Mills, Charles Coburn, and Ella Raines. John Guillerman, director.

• Ted Moore, "Interpol," (Technicolor-Warwick Prods. shooting in Rome) with Victor Mature and Anita Ekberg. John Gilling, director.

• Bob Krasker, "The Story of Esther Costello," (Valiant Films, Ltd. shooting in London) with Joan Crawford and Rossano Brazzi. David Miller, director.

• Henry Freulich, ASC, "The 27th Day," with Valerie French and Gene Barry. William Asher, director.

• Ben J. Kline, ASC, "Rhythm and Blues," with Bill Haley and Alan Dale. Fred F. Sears, director.

• Fred Jackman, "Rin Tin Tin,"* (Screen Gems) with Lee Aaker, and James Brown. Robert Walker, director; "Bengal Lancers,"* (Screen Gems). Richard Hayes, director.

• Kit Carson, "Father Knows Best,"* (Screen Gems) with Robert Young and Jane Wyatt. Jacques Tourneur, director.

• Henry Freulich, ASC, "Ford Theatre,"* (Screen Gems). Danny Dare, director.

WALT DISNEY

• Gordon Avil, ASC, "The Mickey Mouse Club,"*. Sid Miller, director.

• Walter Castle, ASC, "Spin and Marty" *. William Beaudine, director.

• Charles Boyle, ASC, "Johnny Tremain,"* Robert Stevenson, director.

FILMCRAFT STUDIOS

• Virgil Miller, ASC, "You Bet Your Life,"* (Filmcraft Prods.), with Groucho Marx. Robert Dwan, director.

FOX MOVIETONE STUDIOS (New York)

• J. Burgi Contner, ASC, "Jill Corey Show," * (Gold Medal Prods.). Marc Daniels, director.

FOX WESTERN AVENUE STUDIOS

• Karl Struss, ASC, "Broken Arrow,"* with John Lupton. Various directors.

• Lloyd Ahern, ASC, "You Are There,"*. William Russell, director.

• Charles van Enger, ASC, "T.C.F. Hour,"*. Various directors.

GENERAL SERVICE

• James van Trees, ASC, "Burns & Allen Show,"* (McCadden Prods.) with Gracie Allen and George Burns. Rod Amateau, director: Carnation & B. F. Goodrich commercials.* Rod Amateau, director.

• Harry Wild, ASC, "Bob Cummings Show,"* (Laurmac Prods.) with Bob Cummings and Rosemary DeCamp. Norman Tokar, director.

• Phillip Tannura, ASC, "The People's Choice,"* (Norden Prods.) with Jackie Cooper and Pat Breslin. Jackie Cooper, director.

(*Continued on Page 590*)

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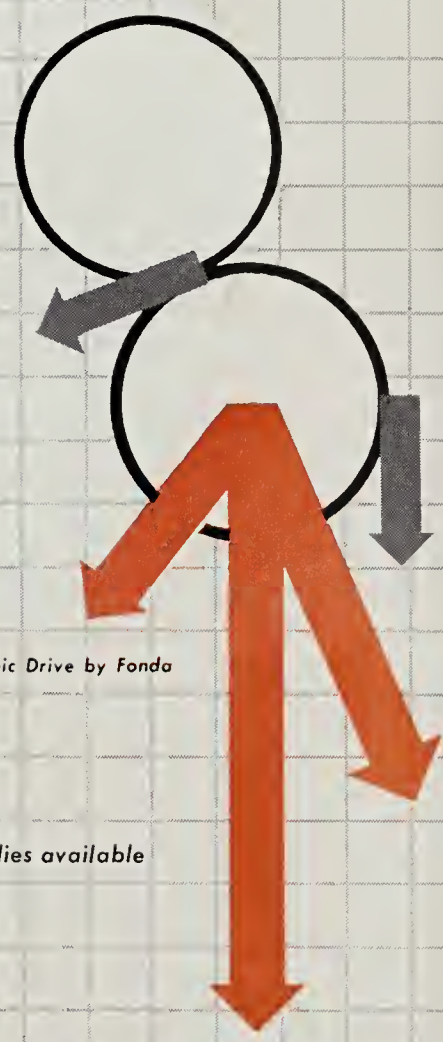
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PHOTOGRAPHIC ASSIGNMENTS

(*Continued from Page 588*)

● Neal Beckner, "The Adventures of Ozzie and Harriet,"* (Stage 5 Prods.) with Ozzie, Harriet, David, and Rickey Nelson. Ozzie Nelson, director.

● Frank Phillips, "Navy Log,"* (Gallu Prods. Inc.). Various directors.

GOLDWYN STUDIOS

● Norbert Brodine, ASC, "The Loretta Young Show."* (Lewislor Inc.,) with Loretta Young. Various directors.

● Edward Fitzgerald, ASC, "Crossroads,"* (Federal TV Inc.). Various directors.

INDEPENDENTS

● Frank Planer, ASC, "The Pride and the Passion," (Technicolor; VistaVision) Stanley Kramer Prod. for UA; shooting in Spain) with Cary Grant and Frank Sinatra. Stanley Kramer, producer-director.

● Brydon Baker, "Snowfire," (McGowan Brothers Studio) with Don Mollie, and Melody McGowan. Stuart McGowan, director.

● Guiseppe Rotunno, "The Monte Carlo Story," (Titanus Prod. shooting in Monte Carlo for U.A. release) with Vittoro De Sica and Marlene Dietrich. Samuel Taylor, director.

● Floyd Crosby, ASC, "Shark Reef," (James O. Radford, Inc. shooting in Hawaii) with Bill Cord and Lisa Montell. Roger Corman, producer-director.

● Alan Stensvold, ASC, "The Fever Tree," (Dudley Pictures shooting in Cuba) with John Cassevetes and Sara Shane. Laslo Benedek, director.

● Joseph LaShelle, ASC, "The Bachelor Party," (UA release, Norma Prods.) with Don Murray, E. G. Marshall and Jack Warden. Delbert Mann, director.

● Fred West, ASC, "Shake, Rattle and Rock," (Sunset Prod., American Int'l release) with Lisa Gaye and Touch Connors. Edward L. Cahn, director.

● Bill Thompson, ASC, "New Refugee," with Jacques Scott and Jean-Ann Lewis. Robert C. Dertano, director.

● Lester White, ASC, "The Kraken," (Levy-Gardner-Laven for UA release) with Tim Holt and Audrey Dalton. Arnold Laven, director.

● Lionel Lindon, ASC, "The Big Caper" (Pine-Thomas for UA release) with Rory Calhoun and Mary Costa. Robert Stevens, director.

● William Margulies, "Gambling Man," (Bel Air Prod. for UA release) with Dane Clark and Lori Nelson. Lesley Selander, director.

● Hal McAlpin, "Pawnee," (Gross-Krasne Prods. Eastman color; widescreen) with George Montgomery and Lola Albright. George Waggner, director.

● Ellsworth Fredericks, ASC, "Trooper Hook," (Fielding Prod. for UA release) with Joel McCrea and Barbara Stanwyck. Chas. M. Warren, director.

● Richard Bunha, "Man on a Motorcycle," (Jana Film Enterprises Prod.) with Jim Best and Mala Powers.

● Guy Roe, ASC, Buick commercials,* (Mcconnachie Prods. Eastman color at Detroit Proving Grounds.) Jack Hivley, director.

(*Continued on Page 592*)

THE NEW MAGNASYNC

MARK IX

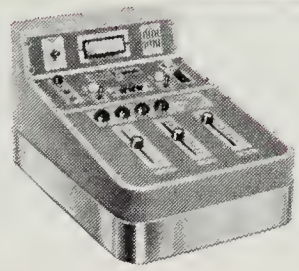
magnaphonic sound system



BASIC SYSTEM "A"

with built-in record-play amplifier and remote control assembly

Priced from **$1995**



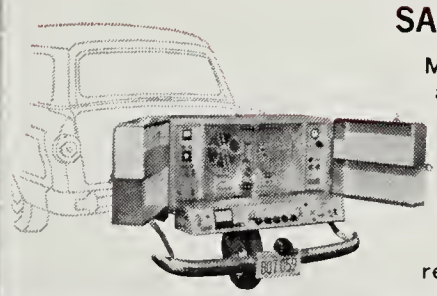
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Basic system "A" with remote control assembly built into the new Magnasync Model G-932 slide wire attentuator microphone mixer in matching case

SYSTEM "C"



Basic system "A" including the popular Magnasync Model G-924 microphone mixer with remote control assembly in matching case



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We packaged the system in dural metal cases--a lightweight, durable enclosure that could stand unusual abuse. The control panel, which can be remoted, gives the operator fingertip pushbutton control of the machine. All amplifier and mechanical functions, including a sync footage counter, are incorporated into this little control panel.

Aside from the many features and conveniences, we have exercised extraordinary care in the fabrication, assembly and testing of the MARK IX system."

Bill Stutz

W. H. STUTZ, EXECUTIVE VICE PRESIDENT

"For over a decade Bill Stutz, Jim Green and I have worked together as a team--building equipment of which we are proud, and making friends to whom we are deeply grateful.



Teamwork, such as ours, is equally vital in your operation and this applies to both men and machines. Each of our several recording systems has been carefully planned to meet the varying requirements of producers throughout the world. Literally thousands of Magnasyncs have been selected with confidence, and are in daily operation as an important member of production teams.

Our magnificent, new MARK IX does not obsolete our other models in any sense of the word. This is the system we have styled and crafted to give you that extra "pride of ownership" that comes from knowing you have the best!"

D. J. WHITE, PRESIDENT

"We have emphasized maintenance and serviceability in the MARK IX amplifier. These factors were given as much consideration as performance in the belief that such a high quality amplifier can only remain so, if designed to sustain shock and remain reliable under extreme operating conditions.



We have made "plug-in" assemblies of the bias oscillator, record section and playback amplifier using subminiature tubes and components. With the amplifier mounted to the rear door of the film transport in a compound hinging arrangement, all components are readily accessible to the maintenance technician.

With its many unique features, carefully selected materials and special attention to detail, we have made the MARK IX our proudest engineering achievement."

Jim Green

J. W. GREEN, VICE PRESIDENT

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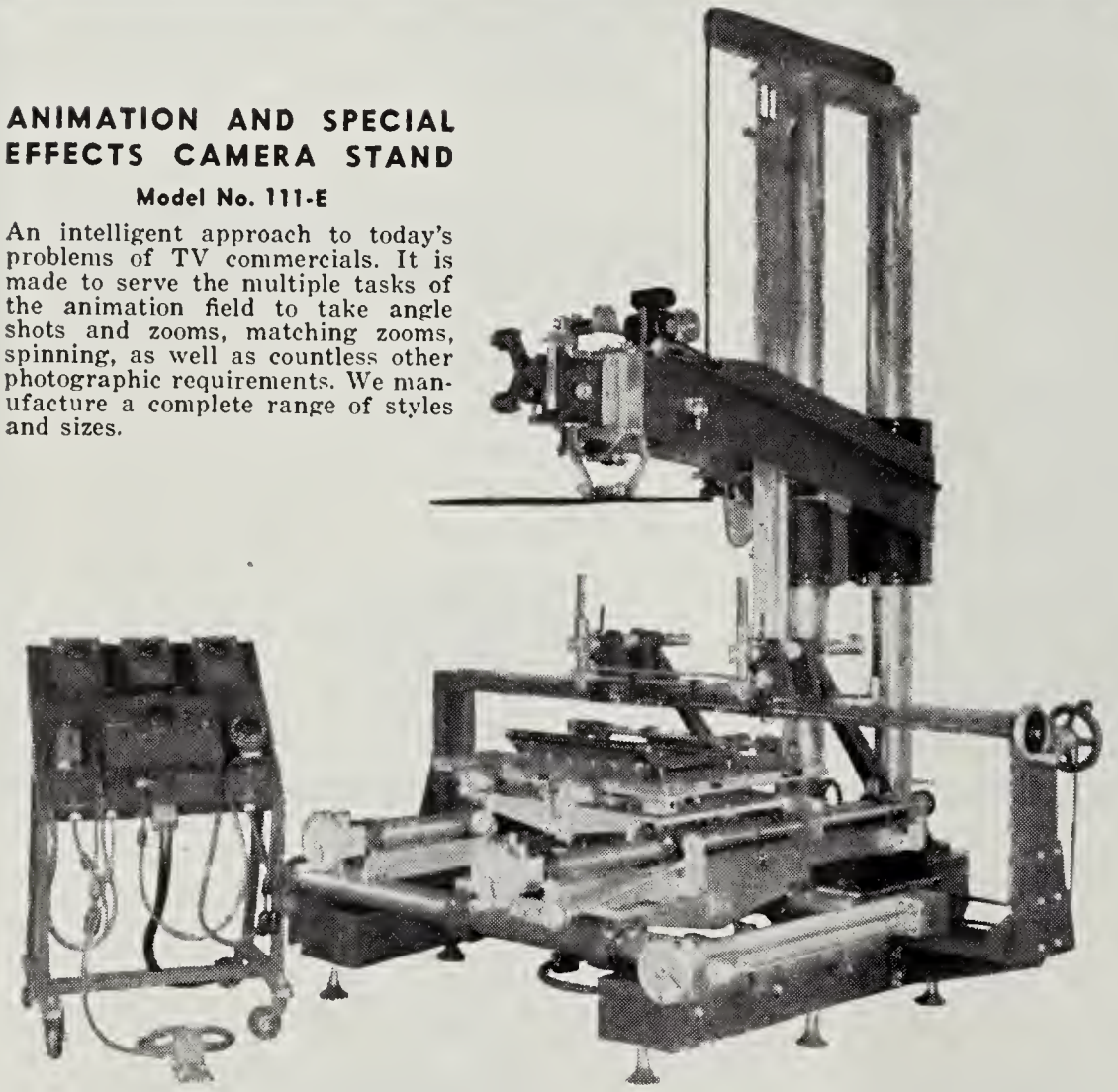
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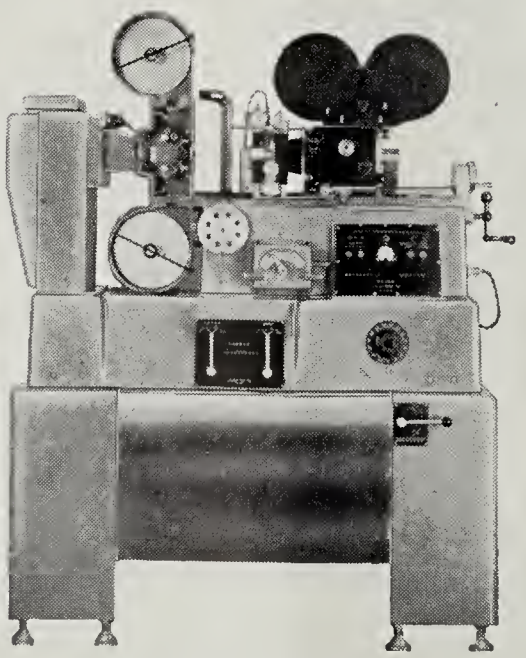
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PHOTOGRAPHIC ASSIGNMENTS

(*Continued from Page 590*)

KTTV

● STUART THOMPSON, ASC, "Lassie,"* (Robert Maxwell Prods.) with Jan Clayton and George Cleveland. Les Selander, director.

● JOHN MARTIN, ASC, "Wild Bill Hickok,"* (Wm. Broidy Prods.) with Guy Madison and Andy Devine. Will Jason, director.

● MACK STENGLER, ASC, "Captain David Grief,"* (Guild Films, Inc.). Duke Goldstone, director.

METRO-GOLDWYN-MAYER

● ROBERT SURTEES, ASC, "Raintree County," (65mm and Color) with Montgomery Clift and Elizabeth Taylor. Edward Dmytryk, director.

● RUSSELL HARLAN, ASC, "Something of Value," (shooting in Africa), with Rock Hudson and Dana Wynter. Richard Brooks, director.

● PAUL VOGEL, ASC, "The Wings of Eagles," with John Wayne, Dan Dailey and Maureen O'Hara. John Ford, director.

● HAROLD MARZORATI, ASC, "Slander," with Van Johnson and Ann Blyth. Roy Rowland, director.

● JOSEPH RUTTENBERG, ASC, "Harvest Thunder," (CinemaScope & Color, shooting in France) with Mel Ferrer and Pier Angeli. Jeffrey Hayden, director.

● ROBERT BRONNER, "Ten Thousand Bedrooms," (CinemaScope and color—shooting in Rome) with Dean Martin and Anna Maria Alberghetti. Richard Thorpe, director.

● JOHN ALTON, "Designing Woman," (CinemaScope and Color) with Gregory Peck and Lauren Bacall. Vincente Minnelli, director.

● PAUL IVANO, "Lizzie," (Bryna Prod.) with Eleanor Parker and Richard Boone. Hugo Haas, director.

MIKARO STUDIO (New York)

● MORRIS HARTZBAND, "Rock, Rock, Rock," (Vanguard Prod.). Will Price, director.

MOTION PICTURE CENTER

● SID HICKOX, ASC, "I Love Lucy,"* (Desily Prods.) with Lucille Ball and Desi Arnez. James Kern, director; "December Bride,"* (Desilu Prods.) with Spring Byington, Dean Miller, Frances Rafferty, Jerry Thorpe, director.

● ROBERT deGRASSE, ASC, "The Danny Thomas Show,"* (Desilu Prods.) with Danny Thomas, Sherry Jackson. Sheldon Leonard, director; "The Brothers,"* (Desilu Prods.) with Gale Gordon. Hy Averback, director.

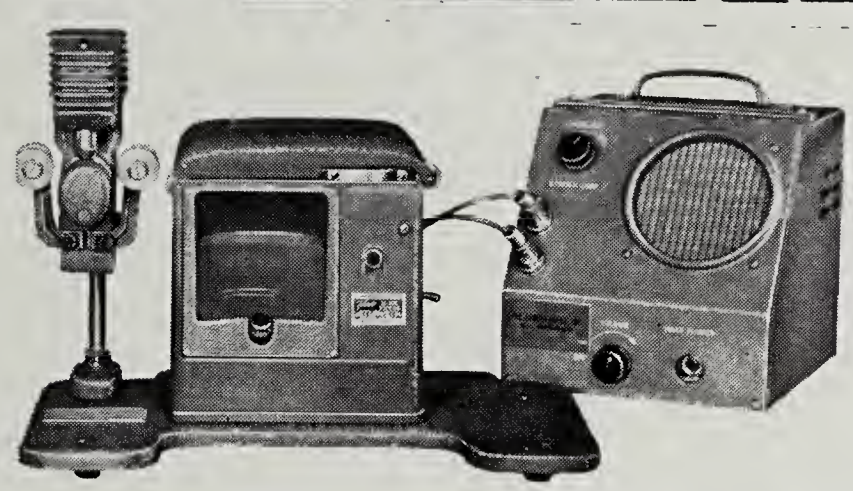
● HENRY CRONJAGER, "Sheriff of Cochise,"* (Desilu Prods.) with John Bromfield. Lee Sholem, director.

● JOE NOVAK, ASC, "Wire Service,"* (Desilu Prods.) with Dane Clark. Various directors.

● CHARLES STRAUMER, "Adventures of Jim Bowie,"* (Desilu Prods.) with Scott Forbes. Lewis Foster, director.

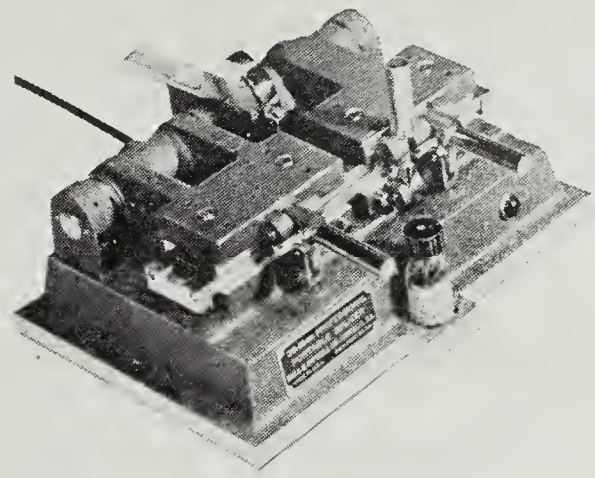
(*Continued on Page 594*)

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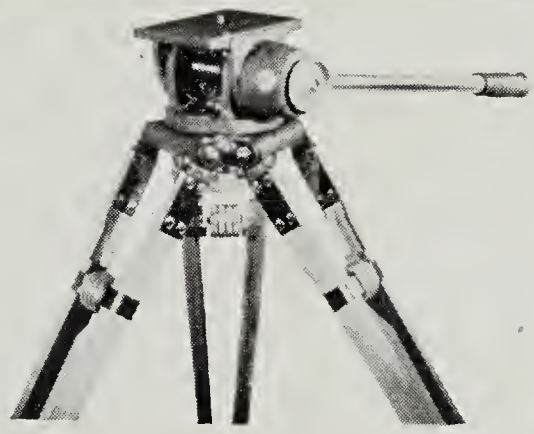
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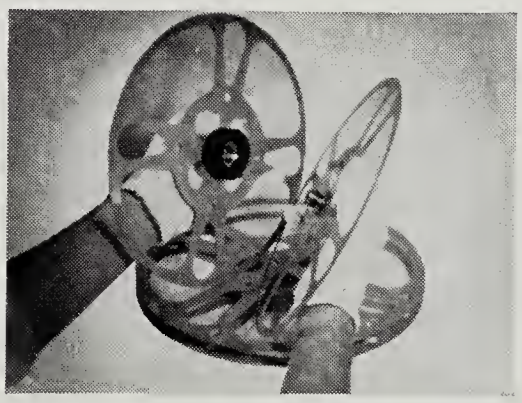
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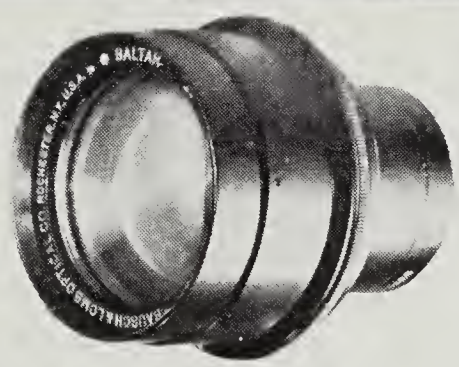
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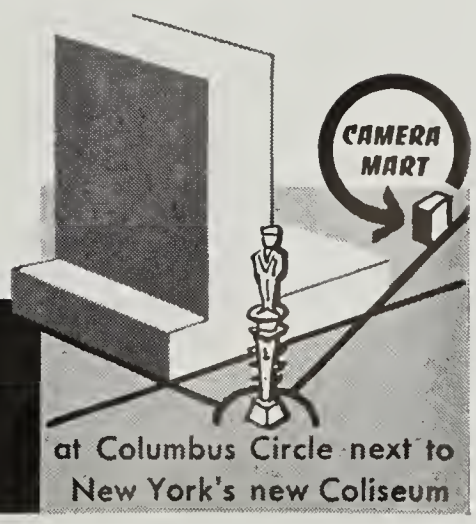
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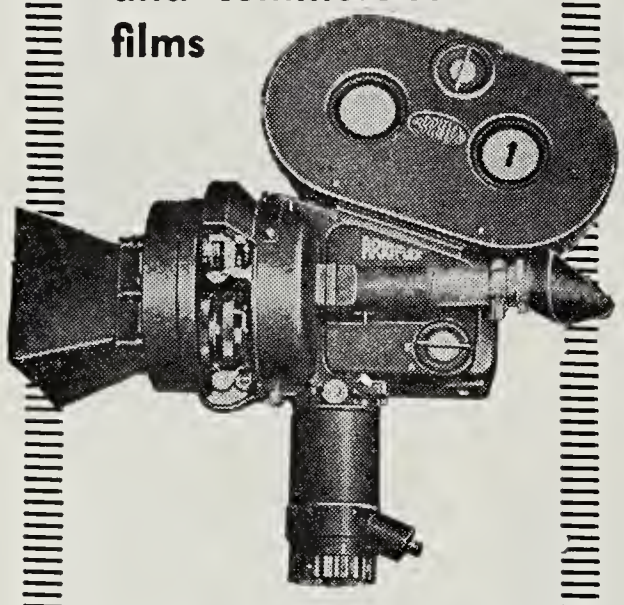
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PHOTOGRAPHIC ASSIGNMENTS

(*Continued from Page 592*)

PARAMOUNT

● Sam Leavitt, ASC, "Flamenco," (Vista-Vision and Color) (Being photographed in Spain) with Carmen Sevilla and Richard Kiley. Don Siegel, director.

● Jack Warren, ASC, "Beau James," Vista-Vision and Color, with Bob Hope and Vera Miles. Mel Shavelson, director.

● Haskell Boggs, "The Delicate Delinquent," (Vsta-Vision) with Jerry Lewis and Martha Hyer. Don McGuire, director.

REPUBLIC STUDIOS

● Ed Colman, ASC, "Noah's Ark,"* (Mark VII Prods.) with Paul Burke. Jack Webb, director.

● John MacBurnie, ASC, "Jane Wyman Show,"* (Lewman Prods.) with Jane Wyman. Sidney Lanfield, director.

● John Russell, ASC, "On Trial,"* (Fordyce Inc.) with Joseph Cotton. Various directors: "The Millionaire,"* (Don Fedderson Prods.). Al Green, director; "Hell's Crossroads," (Naturama) with Stephen McNally and Peggy Castle. Franklin Adreon, director.

● William Sickner, ASC, "Alfred Hitchcock Presents"). Jules Bricken, diirector: "On Trial,"* (Fordyce Inc.) with Joseph Cotton. Various directors.

● Reggie Lanning, "Alfred Hitchcock Presents,"* Robert Stevenson, director.

● Robert Pittack, ASC, "General Electric Theatre,"* with Greer Garson. H. Dougherty, director.

● Herb Kirkpatrick, "The Crusader,"* (Revue Prods.). Allen Miner, director.

● Ellis Thackery, ASC, "Frontier Doctor,"* (Studio City TV) with Rex. Allen. William Whitney, director.

● Ray Rennahan, ASC, "On Trial,"* (Fordyce Prods.) with Joseph Cotton. Various directors.

● Virgil Miller, ASC, "Do You Trust Your Wife,"* (Don Fedderson Prods.) with Edgar Bergen. Jim Morgan, director.

HAL ROACH STUDIOS

● Jack Mackenzie, ASC, "Code 3,"* Various directors.

● Paul Ivano "Stories of John Nesbitt,"*. with John Nesbitt. Various directors. TV, with John Nesbitt. Various directors.

● Lothrop Worth, ASC, "The Gale Storm Show,"* with Gale Storm and ZaSu Pitts. Various directors.

RKO

● Robert Planck, ASC, "The Girl Most Likely," (Eastman color) with Jane Powell and Cliff Robertson. Mitchell Leisen, director.

● Lucien Ballard, ASC, "The Lady and the Prowler," (color) with Diana Dors and Rod Steiger. John Farrow, producer-director.

20TH CENTURY FOX

● Jack Hildyard, "Anastasia," (Deluxe color; CinemaScope) (shooting in London) with Ingrid Bergman and Yul Brynner. Anatole Litvak, director.

● Joe Biroc, ASC, "Black Whip," (Regal Films; CinemaScope) with Hugh Marlowe and Coleen Gray. Charles M. Warren, director.

● Ossie Morris, "Heaven Knows Mr. Allison," with Deborah Kerr and Robert Mitchum. John Huston, director.

● Leo Tover, ASC, "Love Me Tender," (CinemaScope & Color) with Richard Egan and Debra Paget. Robert Webb, director.

● Joseph MacDonald, ASC, "True Story of Jesse James," (CinemaScope and Color) with Robert Wagner, Jeffery Hunter and Hope Lang. Nicholas Ray, director.

● Charles Clarke, ASC, "Three Brave Men," (CinemaScope) with Ernest Borgnine, Ray Milland and Diane Jergens. Philip Dunne, director.

● Leon Shamroy, ASC, "The Girl Can't Help It," (CinemaScope) with Tom Ewell and Jayne Mansfield. Frank Tashlin, director.

● John Mescall, "Fury at Rock River," (Regal Films) with Forrest Tucker and Mara Corday. William Claxton, director.

● Milton Krasner, ASC, "Boy On a Dolphin," with Alan Ladd, Clifton Webb and Sophia Loren. Jean Negulesco, director.

● John Boyle, ASC, "The Restless Breed," (Eastmancolor; National Pictures) with Scott Brady and Anne Bancroft. Allan Dwan, director.

UNIVERSAL - INTERNATIONAL

● Carl Guthrie, ASC, "The Tattered Dress," (CinemaScope) with Jeff Chandler and Jeanne Crain. Jack Arnold, director.

● George Robinson, ASC, "The Night Runner," with Ray Danton and Colleen Miller. Abner Biberman, director.

● Russell Metty, ASC, "Man Afraid," (CinemaScope) with George Nader, Tim Hovey and Phyllis Thaxter. Harry Keller, director.

● William Daniels, ASC, "Night Passage," (Technirama) with James Stewart and Dianne Foster. James Neilson, director.

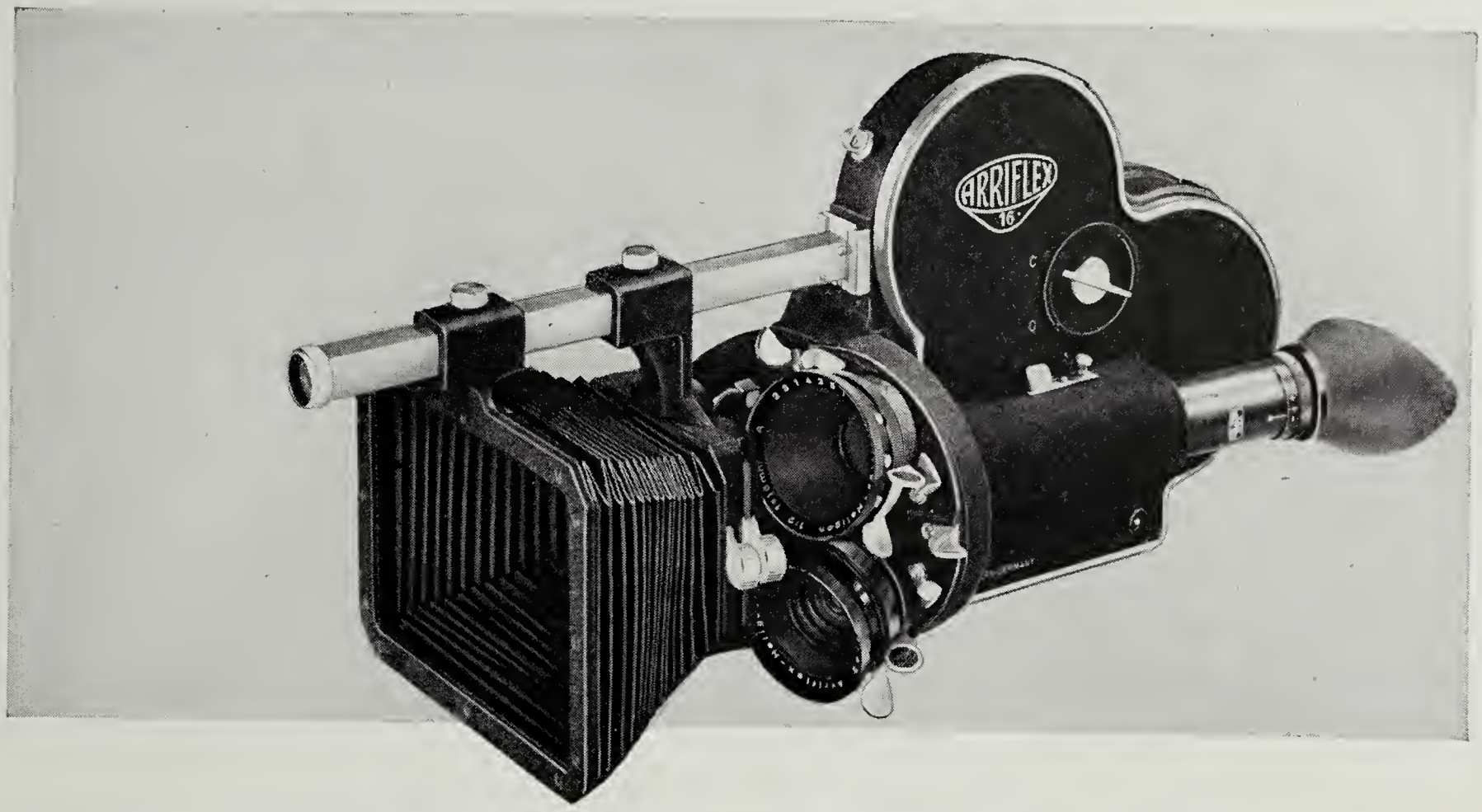
● Ellis Carter, ASC, "The Land Unknown," (CinemaScope) with Jock Mahoney and Shawn Smith. Virgil Vogel, director.

● Maury Gertsman, ASC, Pepsi Cola commercials* with Polly Bergen. Wil Cowan, director; Chevrolet commercials* with Dinah Shore. Wil Cowan, director.

● Irving Glassberg, ASC, Anderson & Clayton commercial.* Wil Cowan, director.

● Charles Wellbourn, Ford commercial* with Tennessee Ernie. Jack Daniels, director; Eastman Xmas commercial.* Jack Daniels, director.

(*Continued on Page 632*)



CHARLES SCIURBA COVERS SPOT NEWS WITH ARRIFLEX 16 — WINS TOP NPPA AWARD



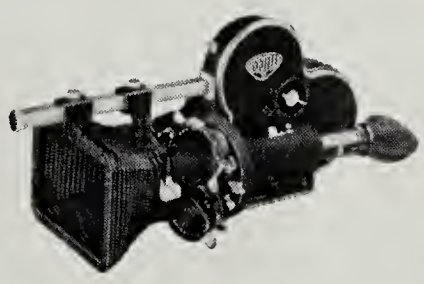
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"It was 11:15 p.m., about the time a normal day comes to an end," writes Charlie Sciurba, prominent Milwaukee newsreel photographer."Suddenly, my police radio flashed . . . fire on Market Street . . . tenement section . . . big blaze. I arrived on the scene with the first fire engines — readied my Arriflex — and shot like crazy."

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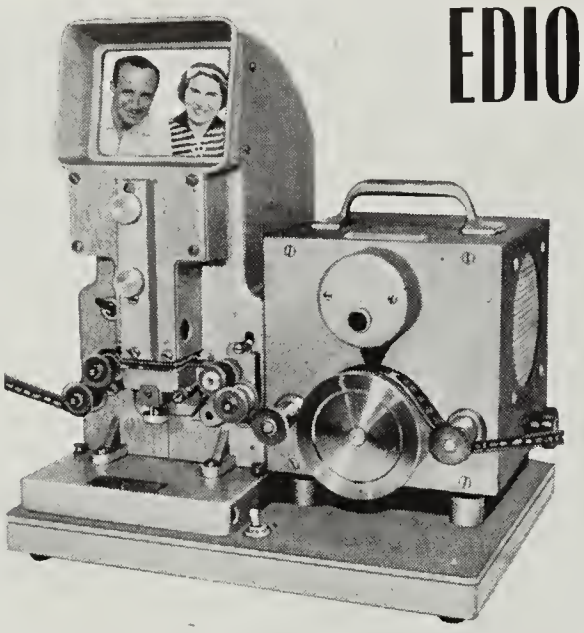
Charlie Sciurba is an Arriflex enthusiast from way back. He credits the unique mirror-shutter reflex viewing system, and the light weight portability for his outstanding scoops. "You'd expect a camera with the precision of an Arriflex," says Charlie, "to be a little too delicate for spot newsreel work — especially with the workout I give a camera. Yet my Arriflex has proved itself as rugged as it is versatile. Do I like the Arriflex . . . ? It's my bread and butter!"

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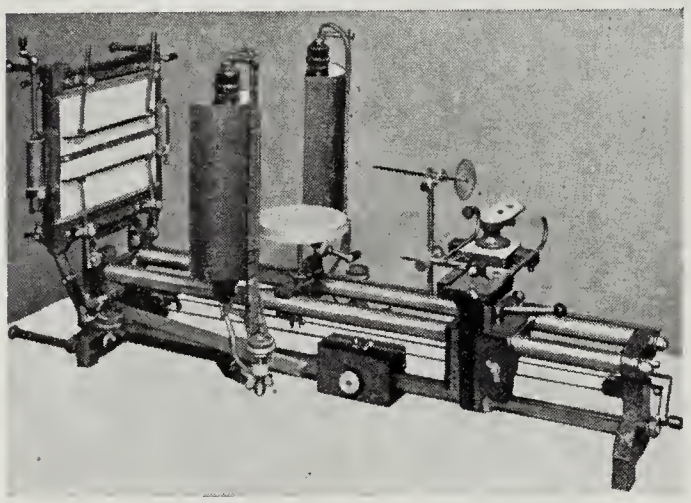


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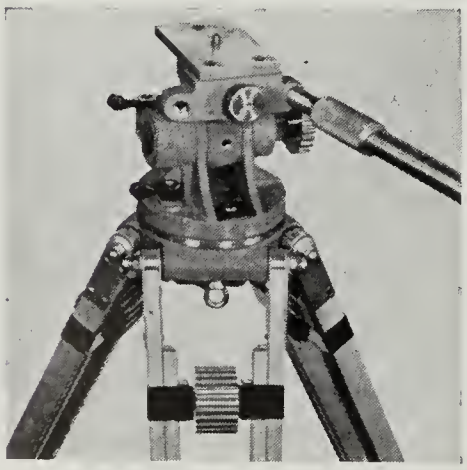
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Industry NEWS

Technirama, the new large-screen system developed by Technicolor and sold to motion picture producers as a product of the Technicolor Companies, employs standard 35mm negative which moves horizontally through the camera exposing an area 8 perforations in length, similar to VistaVision. An anamorphic or CinemaScope-type Technicolor release print made from Technirama negative allows for maximum use of the available positive frame.

The quality of all productions filmed in Technirama will be controlled by Technicolor laboratories.

• • •

Scholarships for two engineering students at his alma mater, Lehigh University is being offered by Byron Roundabush, president of Byron, Inc., Washington, D. C.

The scholarships are awarded each year to junior students in any phase of engineering, and the aid continues through his senior year.

• • •

A semi-professional course in every phase of motion picture and TV production is offered McGill University students by Associated Screen News Ltd., Toronto, Canada. The purpose is to create a new source of creative and technical personnel for Canada's booming motion picture and television industry.

An effort will be made to provide summer vacation employment with Canadian producers for those students desiring a career in the industry.

• • •

Producers Service, Inc., is new organization formed in Washington, D. C., to supply production camera crews and related services such as sets, props, talent, etc., to motion picture producers working in the East Coast area.

Heading the organization are Glenn Johnston, formerly cinematographer for Byron, Inc., and Richard Norling, also a former Byron cameraman.

All members of the organization are affiliated with the I.A.T.S.E.. A complete range of camera and lighting equipment will be available, as will recording services and sound stage space.

Producers Service, Inc. (not related to Producers Service Co., Burbank, Calif.) is located at 1507 M Street, NW., Washington, D. C.

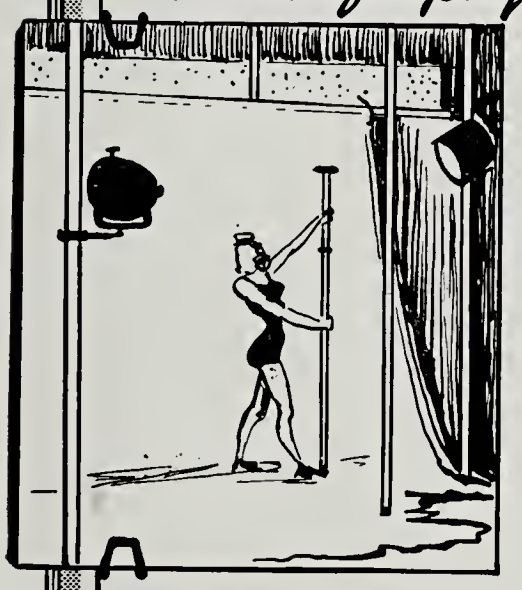
• • •

Foreign language films will henceforth be eligible for Academy Awards consideration, according to decision of Academy announced by president George Seaton.

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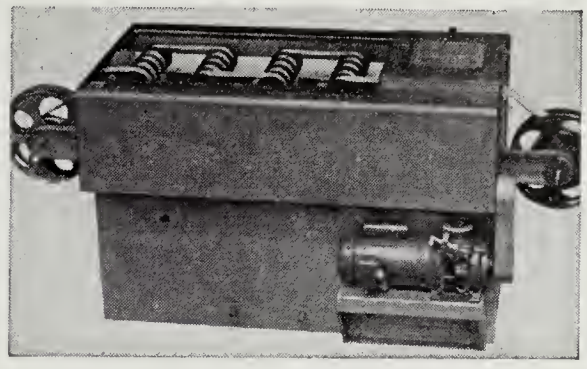
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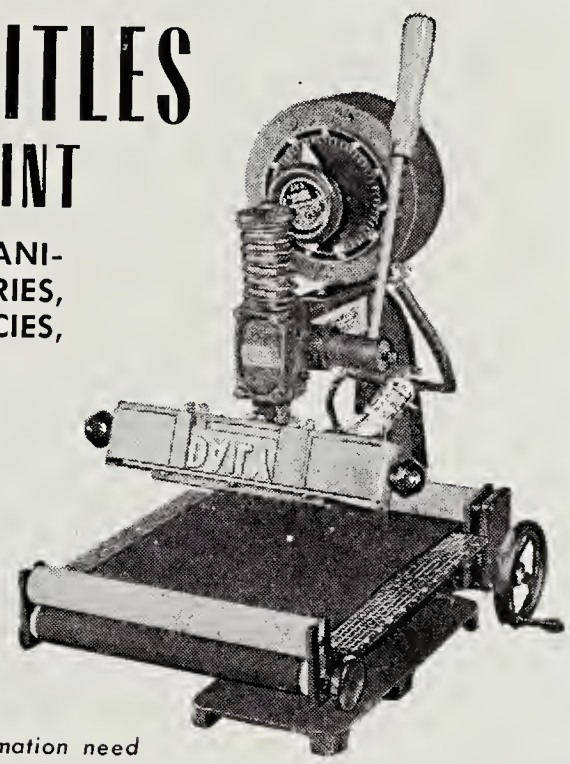
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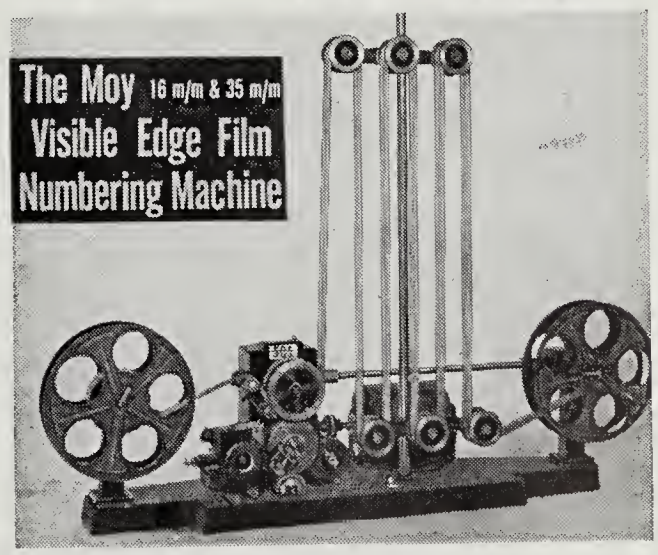
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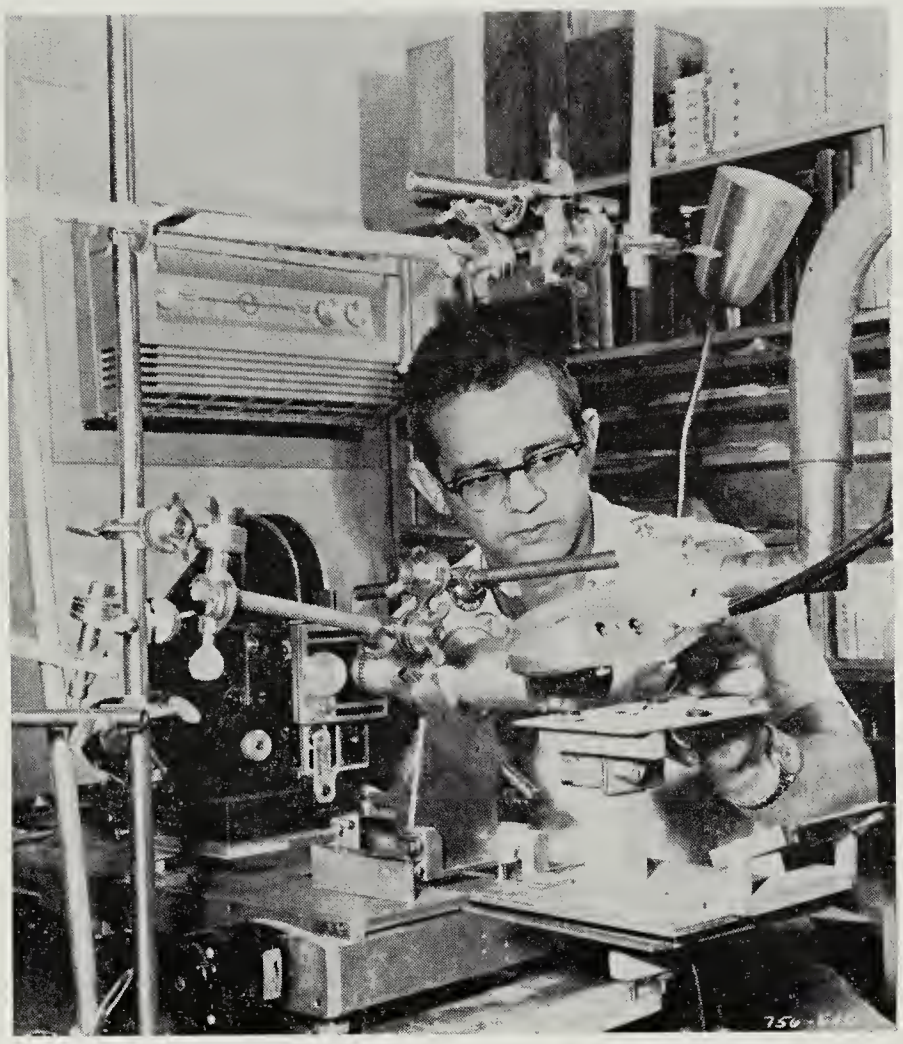
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ROBERT CRANDALL in his home laboratory where much of the 16mm color footage of ants was photographed for Walt Disney's "Secrets of Life." The maze of apparatus enables Crandall to effectively control lighting, atmosphere and humidity to suit his subjects. The Cine Special used to record the ants highly magnified is shown in background.



MRS. CRANDALL, who assists Bob in his home laboratory, focuses the Cine Special equipped with a super, slender telephoto lens—actually a giant extension tube—on a tiny subject magnified is shown in background. (All photos copyrighted by Walt Disney Productions.)

Time-lapse And Telephotos Probe Nature's Secrets

Eighteen of the country's top naturalist-cinematographers contributed rare and skillfully photographed studies of plant and minute animal life for Walt Disney's "Secrets of Life."

To get the fascinating material for "Secrets of Life," his most extravagant True-Life Adventure film, Walt Disney commissioned eighteen top-ranking naturalist-cameramen to concentrate their cameras on the lower levels of animal existence and Nature's most closely guarded mysteries.

The range of this latest naturalist-photographer's report is literally world wide, extending from our doorstep to the farthest horizons. Several years were spent in spying out obscure facts in underground tunnels, in oceanic depths, tidal margins and wild gardens to compile this spectacular vision of a world so close about us yet so remote to common knowledge.

It has remained a secret world largely because its denizens are comparatively small, many of them almost invisible. Yet here in violent competition for existence, whipped by the basic passions of universal life, are some of the fiercest, strongest, strangest, most gorgeous and most highly socialized and strictly governed beings in our universe.

Under the naturalist's magnifying camera lenses and "cold" light, these lilliputs take on the proportions of elephantine mammals—of lions, tigers, giraffe, rhinocerous in whose eyes we, too, are small, impudent and terrible fellow-creatures.

The wondrous world of vegetation with its flowering and seeding and miraculous devices of physical immortality is also depicted in rare photography that often extended over a

period of months for a single growth phase. And the interrelation between these two great orders for mutual benefit in food sources and the mysteries of pollenization or primitive sex functions is stressed. For these purposes the photographers had always to move with a swiftness to catch and record every fleeting act and impulse of living things, and again with a skillful use of stop-action photography to make vegetative growth seem like a swift continuous act from germinating seed to ripened fruit and falling seed again.

Many of the eighteen naturalist-cameramen who contributed footage for "Secrets of life" are veteran cinematographers with many years' experience in furnishing Walt Disney with subject matter for his True-Adventure films. Operating like trained crime lab technicians and police stake-out squads, these naturalist-photographers have solved with patiently-made motion pictures some of nature's most mystifying cases of violence in the animal underworld. From long observation and patient stake-out in hidden places, they knew exactly what to expect, and when and where to find the act and the event that reveal the secrets of creature motive and behavior.

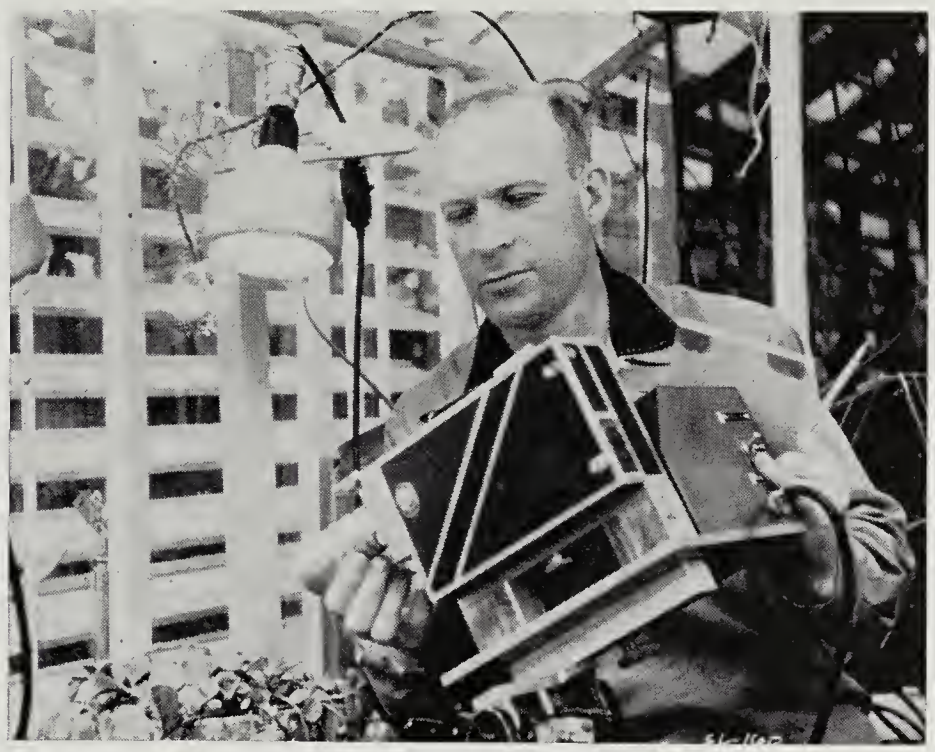
The eighteen cinematographers, most of whom work exclusively with 16mm cameras and Kodachrome film, include Stewart Jewell, Robert Crandall, George and Nettie MacGinitie, Murl Deusing, John Nash Ott, Jr., William A. Anderson, Dr. Tilden W. Roberts, Dr. William M. Harlow, Claude Jendrusch and Arthur Carter, Jack Couffer, Fran William Hall, Rex Elliott, Dr. Roman Vishniac, Vincent J. Schaefer, and Donald L. Sykes.

Stuart Jewell, unexcelled in time-lapse photography and in normal speed cinematography, supplies a natural history of the honey bee with detail of life within the hive and on nectar-pollen gathering journeys like some great poet's golden myth. Jewell is a long time student of this fabulous insect whose sweets have been known from prehistoric time but whose chemical marvels and social mysteries have remained secret until now. Many of the bee's fantastic activities are disclosed for the first time in Jewell's remarkable

(Continued on Page 622)



NATURALIST-photographer and time-lapse expert Stuart Jewell in his home laboratory where he filmed many studies of flowers, plants and fruits for "Secrets of Life" in interval exposures.



JEWELL sets exposure on his Cine-Special preparatory to starting the camera for a series of interval exposures of the growth and ripening of strawberries for "Secrets of Life."



WITH THE Cine-Special and interval timer mechanism closely coupled, naturalist-photographer Jewell watches the equipment make the first exposure on a rare species of plant for the Disney film.



HERE, USING his specially equipped Cine Special camera again, Stuart Jewell films a humming bird at close range, sipping nectar from a blossom for "Secrets of Life."



FIG. 1—Composite photo which shows how author's flash-frame cueing method works in actual practice. As the camera films the action (shown in inset photo) performed against a musical playback, the flash bulb on stand in front of camera is ignited by movement of film in the recorder. This over-exposes one frame of film which becomes the start mark corresponding to start mark on the magnetic sound film.

A Method For Syncing The Pre-Scored Playback With The Picture Film

A simple cueing method for producers of 16mm films that insures accurate synchronization.

By ROY ZEPER

Staff Cinematographer, The Philco Corp.

IN MODERN DAY FILM PRODUCTION, when a scene incorporates music as an accompaniment to a singer or dancer, or to background the actions of a player where exact synchronization is essential, the music is pre-scored and pre-recorded, then played back as the action is filmed in sync with it.

Where the music—played back during filming—is recorded as the sound track for the picture film, there are problems of set noise, difference in sound levels, disc noise (where discs are used for the playback), and often loss in sound quality. For this reason it is preferable to shoot the action against a playback of the music and to use the original recording for the print sound track—dubbing it in later in place of the track recorded during shooting. This method, which has been employed by a number of industrial film producers, invariably introduces the problem of establishing start marks on both the sound and picture film as an aid to the film editor in establishing sync.

The Film Unit of Philco Corporation encountered this recently while shooting a number of playback shots for a 16-mm film production. The action involved three ballet dancers performing to a musical number which had been furnished to us on a disc. It was essential that the dancers should pirouette and relevé in absolute sync with the music; for if a gesture preceded or followed the musical score out of harmony, it would be readily apparent to those familiar with the ballet art.

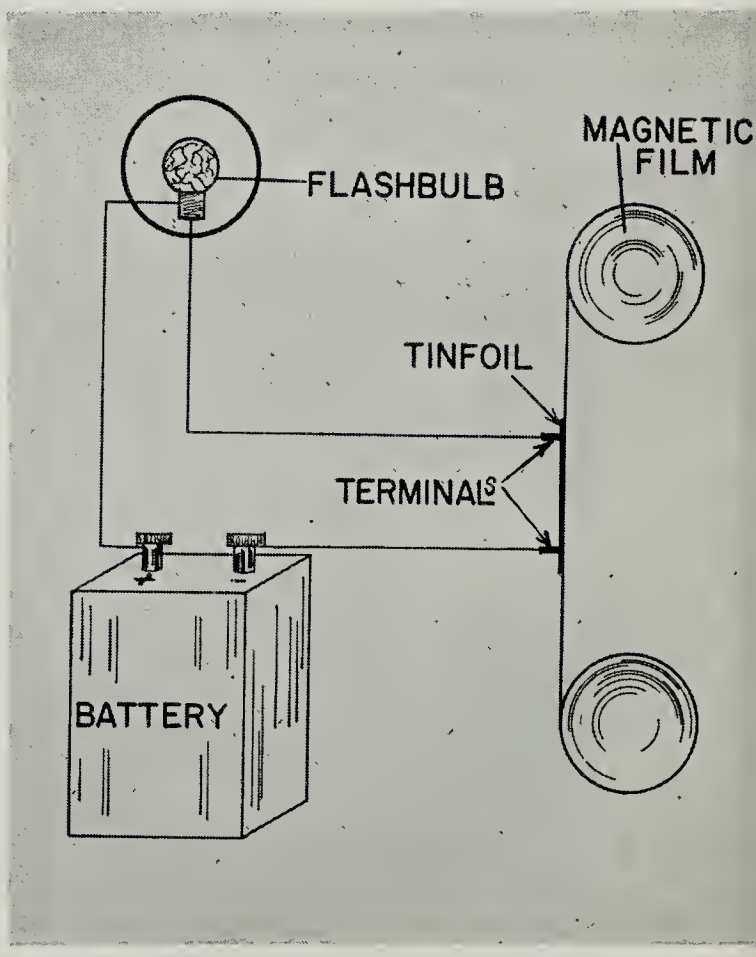


FIG. 2—Diagram of flash-frame system. A segment of tinfoil attached to surface of the sound film bridges the two terminals to close circuit and ignite flash bulb.

Our problem was how to establish accurate start marks—i.e., some recognizable identification to precede the beginning of the playback music, and a corresponding, time-identification on the film to facilitate synchronizing both picture and sound at the editing table.

Our first step was to transfer the music on the disc to 16mm magnetic film, using a synchronous magnetic film recorder. In this way we provided the essential element of synchronization—a steady, uniform rate of travel of the sound medium to match the uniform speed of the film moving through the camera. Both the recorder and the camera were driven by sync motors.

With both the picture film and the sound film now set to move at uniform speeds, the next step was to provide the start or "sync" marks. We hit upon a simple method which utilizes a flash bulb for making the sync mark on the picture film, and employs a small piece of tinfoil as the sync mark on the sound film. The latter triggers the firing of the flash bulb, which over-exposes a single frame of the negative for the picture sync mark. The firing of the flash bulb is shown in the composite photo (Fig. 1). As the camera starts filming the three ballerinas (inset photo), the magnetic recorder (off-stage) causes the flash bulb to ignite.

The sound film cue mark is a ½-inch piece of tinfoil attached to the film with Scotch tape 24 frames in advance of the music, which is the standard sound track advance over picture. The tinfoil segment on the sound film bridges the electrical terminals of the flash system as it passes over them and, being an electrical conductor, closes the circuit and causes the flash bulb to ignite—as shown in the diagram Fig. 2.

The arrangement is shown pictorially in Fig. 3. Here the segment of tin foil rests against the two spring steel contacts, which press lightly against the base side of the magnetic film. Figure 4 shows the work print of the picture film and sound track film locked in the synchronizer, with arrows pointing to the corresponding start marks. Matching the work print cue mark (flash-frame) with the sound track (tin foil) assures that both will remain in sync throughout the editing procedure.

It should be emphasized that electronic flash cannot be used successfully in this flash-frame method of start-marking the picture film. This is because the electronic flash has a duration of but 1/1000th of a second against that of about 1/25th second for the flash bulb.

It is also recommended that a 22½- or 45-volt battery be used to deliver the strong electrical surge required in firing the flash bulb. **END**

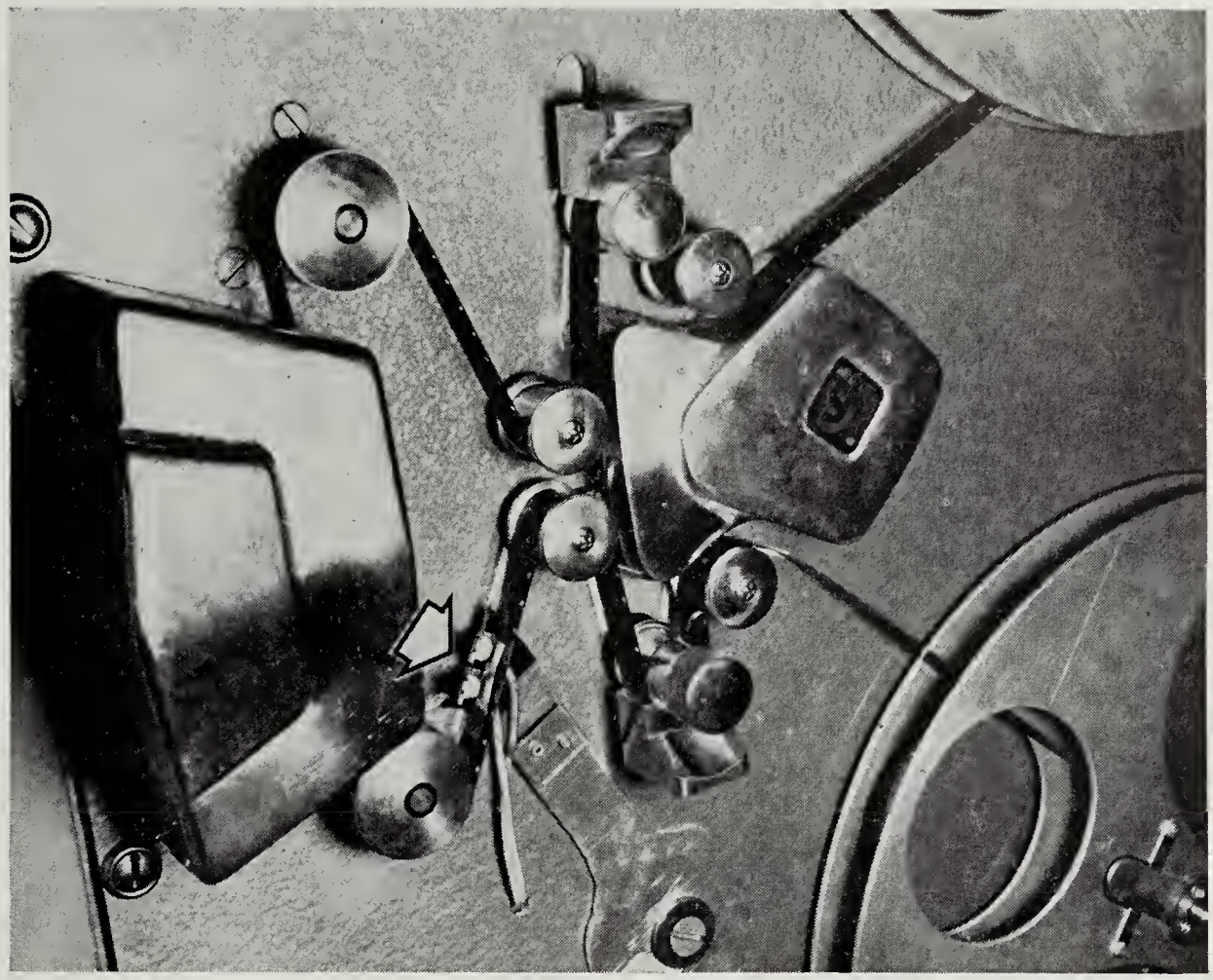


FIG. 3—Arrow points to the two spring steel terminals mounted in film path of Stancil-Hoffman synchronous magnetic 16mm film recorder. Here the tin-foil segment is shown bridging the two terminals which closes the electrical circuit and ignites the flash bulb.

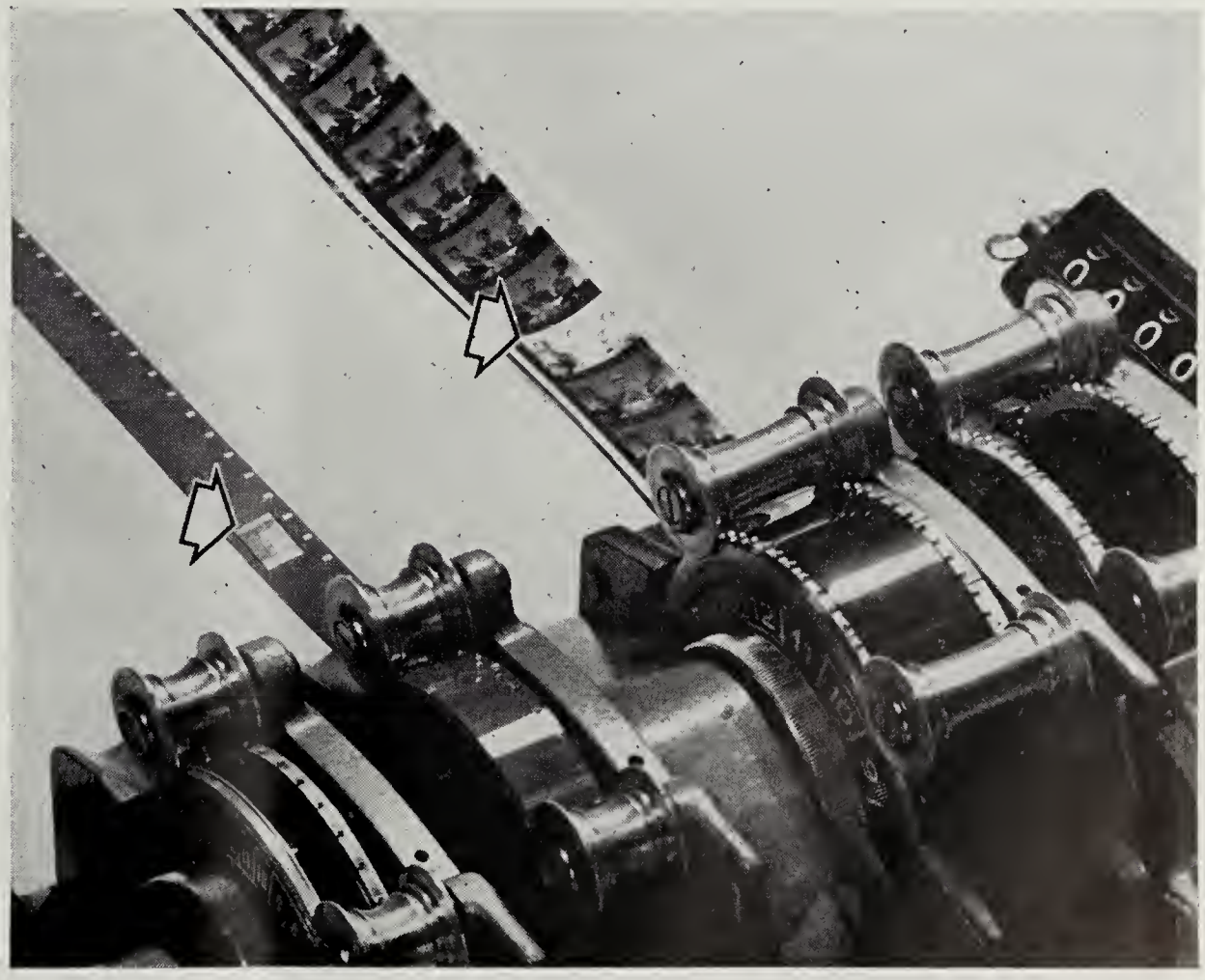
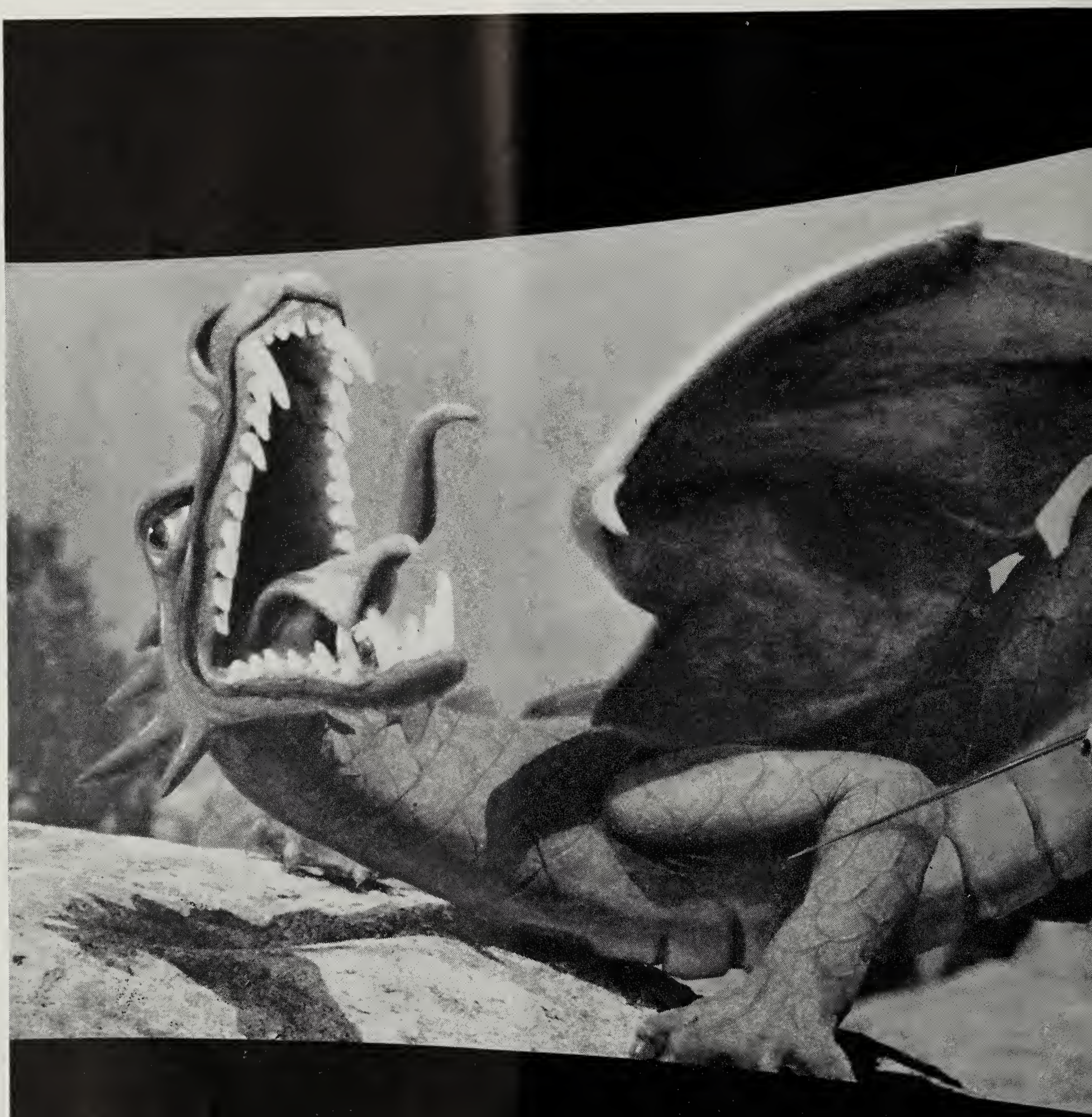


FIG. 4—Arrows point to the tin foil segment attached to the 16mm magnetic sound film, also the flash on the 35mm picture film. Both films are locked in sync in the synchronizer, ready for editing.

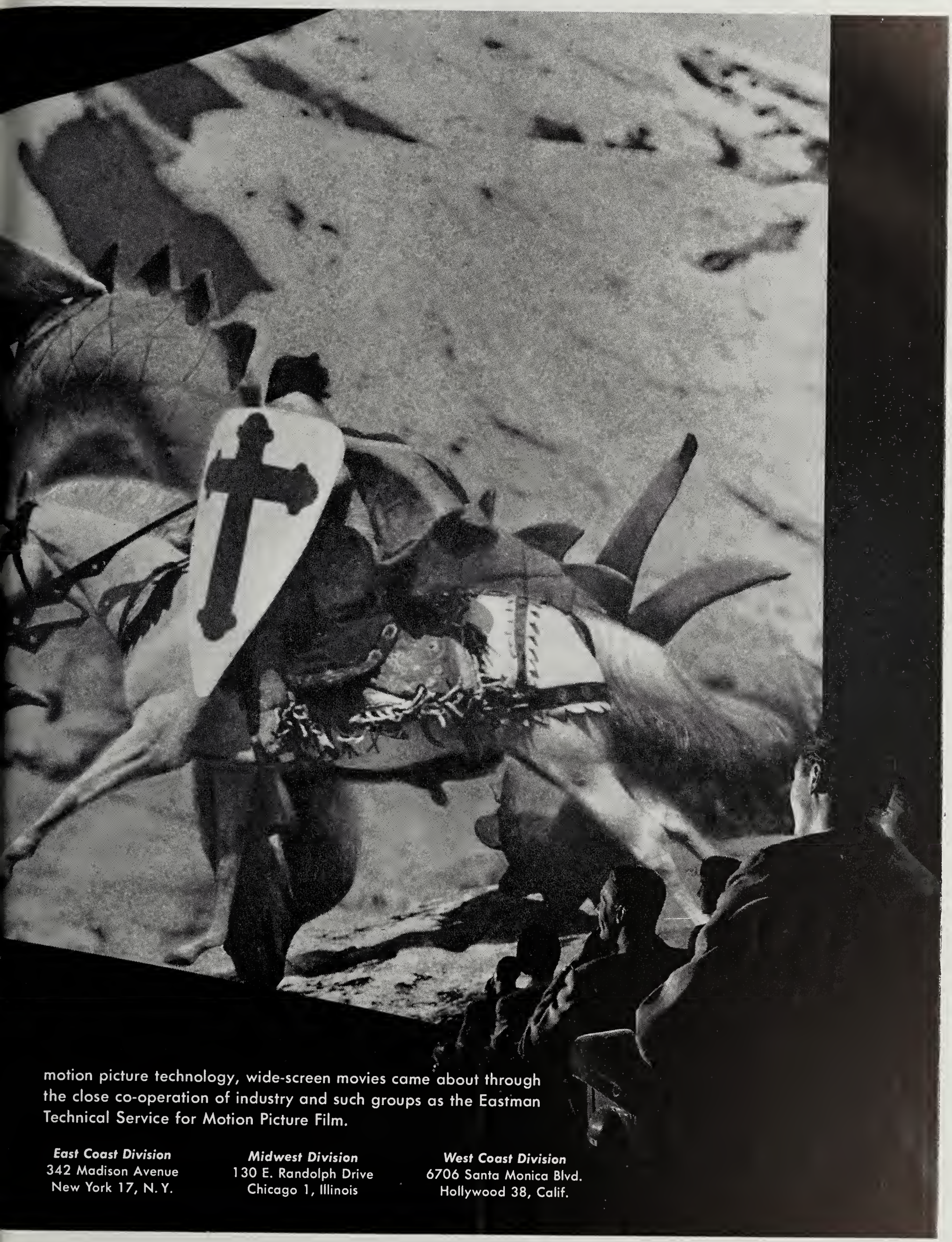


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motion picture technology, wide-screen movies came about through the close co-operation of industry and such groups as the Eastman Technical Service for Motion Picture Film.

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Photographing The Television Image

Film records made of television programs are recorded by motion picture cameras having special shutters

EVERY FIELD of motion picture photography has its particular set of problems and requirements, and this is especially so with what is perhaps the newesst field—that of kinescope photography, also known as television recording. This has to do with recording on motion picture film the image on a television tube. Such films are required where a given program must be repcated later or re-broadcast at a later hour because of regional time differences. Other uses for kinescope films are: when a program is to be syndicated to other network stations, air-checks of live TV programs, legal records of programs, and the preservation of historical events, etc. Until the re-introduction of lenticular film recently, kinescopes of color TV programs were not possible in color.

Television images in the U. S. are normally scanned at the rate of 30 frames per second (each complete frame cycle consisting of 2 interlacted TV fields). However, a method has been perfected whereby TV images can be smoothly recorded for standard 24 frames per second motion pictures photography by exposing one frame of film for every 525 lines of television (the equivalent of 2 TV fields or one complete TV frame cycle) and moving a new frame of film into place during the time equivalent to 131¼ TV lines, which is equivalent to one-half of one TV field.

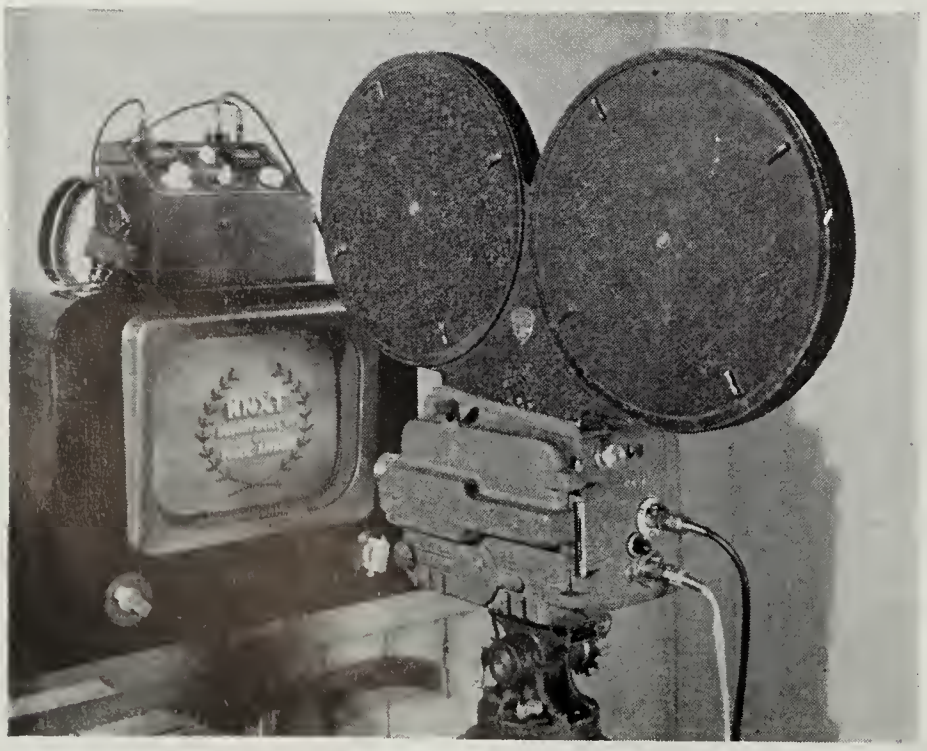
Thus, for successful kinescope cinematography, the recording motion picture camera (usually of special design) exposes one frame of film for exactly 1/30 of a second (the length of exposure of a TV frame) and moves another frame of film into place (without exposure, of course) within the small interval of 1/120 of a second. This is most easily accomplished with an electronic shutter, which blanks or cuts off the TV image at the end of every 525 TV lines.

Most kinescope recording cameras, however, utilize a mechanical shutter, similar to standard motion picture cameras. A shutter revolving at the 24 cycle rate (the frame speed of sound film), having a closed angle of 72° and an open angle of 288°, will have a closed time of 1/120 of a second and an open time of the required 1/30 of a second. Such cameras (two of which are pictured here) are made by several manufacturers, including Producers' Service (Acme), Eastman Kodak Co., Mitchell Camera Co., Berndt-Bach, RCA, etc. A separate motor is employed to drive the shutter independently in order to insure accurate timing.

Mitchell Camera Corporation makes a 35mm kine recording camera which employs an electronic shutter. The company has also been developing a 16mm kinescoping camera that will have a mechanical shutter and will eliminate need for the separate shutter motor. Sixteen-mm kinescope cameras are in greater favor than those using 35mm film, chiefly because of the economics involved.

In the process of converting 30 TV frames to 24 motion

AURICON CINE-VOICE camera fitted with the patented Auricon kinescope shutter and Mitchell 1200-foot film magazine for television film recording. This single-system camera will record TV programs—both the picture and sound—directly from a monitor screen or home TV receiver.





EASTMAN KODAK Company produced one of the first kinescope cameras. Here a special 1200-foot magazine for 16mm film is being mounted on it by the camera's designers, William Feldman and Joseph L. Boon.

picture frames, some frames of film photograph or record parts of some TV fields. The juncture on the film frame where these part-fields meet is sometimes called a "splice." Where camera timing is accurate these splices are invisible. However, where timing is inaccurate a phenomenon known as "banding" or "shutter bar" takes place. When the shutter is slow in closing, over-exposure results where the part-fields join, and the shutter bar takes the form of a white line. If the shutter closes too soon, under-exposure takes place and the line is black.

The application of a single coat of brushing lacquer on the edge of the shutter blades often can make the difference between the presence or absence of banding. More than one "splice" may be present (which will show on the screen as two shutter bars if there is banding) depending on the phasing between the camera shutter and the television image impulses.

The lenses used on cameras employed for kinescoping need not be color corrected, according to Jackson J. Rose, writing in the *American Cinematography Handbook*, nor is great depth of field necessary. "It is more important that the lenses be of high speed and capable of producing a very sharp image with high resolution of a flat surface," he says. "There should be no distortion due to curvature of the glass elements or falling off of light transmission toward the outside edges. They should be coated; 40mm and 50mm lenses in calibrated mounts are usually used with 16mm kinescope cameras."

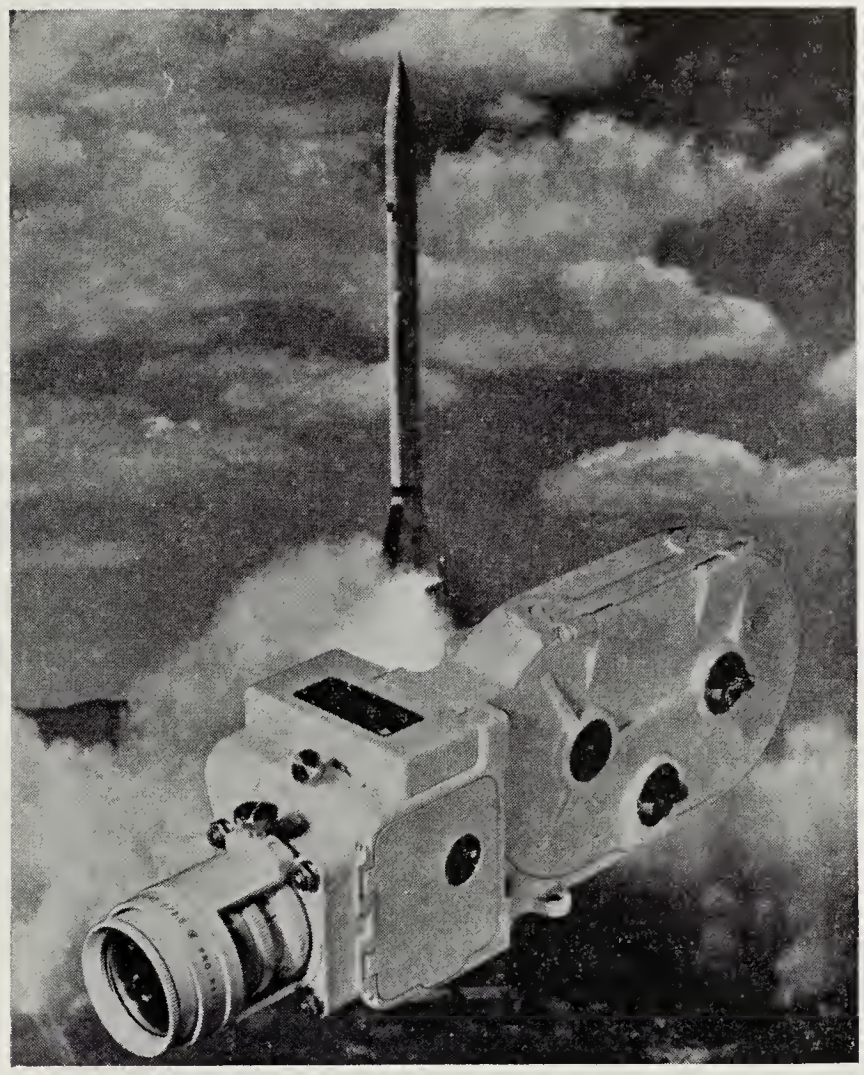
The accuracy of visual focusing may be checked by examining under a microscope a piece of exposed and developed negative.

In order to record a half-hour television program without interruption, camera magazines have been designed which will accommodate a load of 1200 feet of 16mm film. Those TV stations which make kinescope recordings on 35mm film use 6000-foot magazines, which afford continuous recording for a full hour.

Some kinescope cameras can be had that have sound recording equipment built-in, making it possible to record the video image and the sound on the same film. Some stations prefer to record the sound separately on a recorder synchronized with the camera. This latter method, known as double system sound recording, greatly facilitates editing and permits a better quality sound track to be produced.

While some kinescope recording is done by photographing the TV image from the face of a monitor tube or from a regular home television receiver, recording done by the TV stations utilizes

(*Continued on Page 624*)



COMPOSITE PHOTO shows the new Fastair high-speed 16mm motion picture camera developed by Wollensak Optical Co. for recording flight characteristics of guided missiles; and in background, the type of missile in which it will be used as a data recording instrument.

Guided Missile Camera

Fastair is the first high-speed camera designed to record flight characteristics of guided missiles.

A NEWLY-DEVELOPED guided missile speeds skyward toward its objective. Will it be on target, or will it miss and return to earth with its secret locked inside? If there is failure who will tell? How will engineers know what was wrong, what part failed, why it missed?

These and other delicate engineering problems baffled the research and engineering staff at Lockheed. Thy knew that photography could, if given the opportunity, picture the weaknesses, help point up the answers. But where was there a high speed motion picture camera strong enough to withstand the high "G" loads, severe vibrations, and shock necessary to do the job?

There was none. So researchers from Lockheed's Missile Systems Division brought their problems to Wollensak Optical Company, manufacturers of the world's most versatile high speed camera, the Fastax. Wollensak designers and engineers under the direction of Robert Herden, project engineer, went to work. From their broad knoweldge of the field of high-speed photography, and with their understanding of the problem there evolved an entirely new high-speed motion picture missile camera so rigidly constructed that it can withstand 100 G (gravity load factor) during launching, accelcration and deacceleration of guided missiles. It was built and put through the several tests.

(*Continued on Page 626*)



STRANDED SEA LION encountered by crewmen of U.S.S. Edisto on Navy's "Operation Deepfreeze" in Antarctic. Photo is a frame enlargement from 16mm color film shot by cameraman Bill Hartigan for NBC's TV newsreel.



OPERATION DEEPFREEZE scientists start out on exploratory hike over barren wastes of Antarctic, pulling sled loaded with their supplies. Clear weather favored Hartigan's color photography.



HARTIGAN'S 16mm Auricon camera caught the Navy scientists returning to their Antarctic base airstrip, following an exhausting, exploratory hike on the frozen windswept continent near the South Pole.



NBC's Bill Hartigan shown using unique body-pod which enabled him to operate the Auricon Pro-600 as a hand-held sound camera. Hartigan accompanied Navy's recent South Pole expedition, "Operation Deepfreeze," is scheduled to re-join the scientists when they re-embark for Antarctic this fall.

Operation "Deepfreeze"

The worst climatic conditions ever endured by a cameraman were encountered by Bill Hartigan filming Navy's exploration of Antarctic for NBC.

By JOE HENRY

THE SOMETIMES rigorous location filming, familiar to many cinematographers, is livingroom comfort compared to the incredibly cold and difficult shooting conditions experienced by cameramen on Antarctica with "Operation Deepfreeze."

Fifty-two thousand feet of 16mm sound film in color were shot by NBC's William B. Hartigan, the only television news cameraman to accompany the Navy's South Pole expedition. "Operation Deepfreeze" is the Navy's name for the American participation in the Antarctic phase of the International Geophysical Year. IGY is the largest international scientific undertaking in the history of mankind, and is designed to help all nations gain more knowledge of the earth and its atmosphere by making meteorological and other measurements at various points on the surface of the globe.

(Continued on Page 616)

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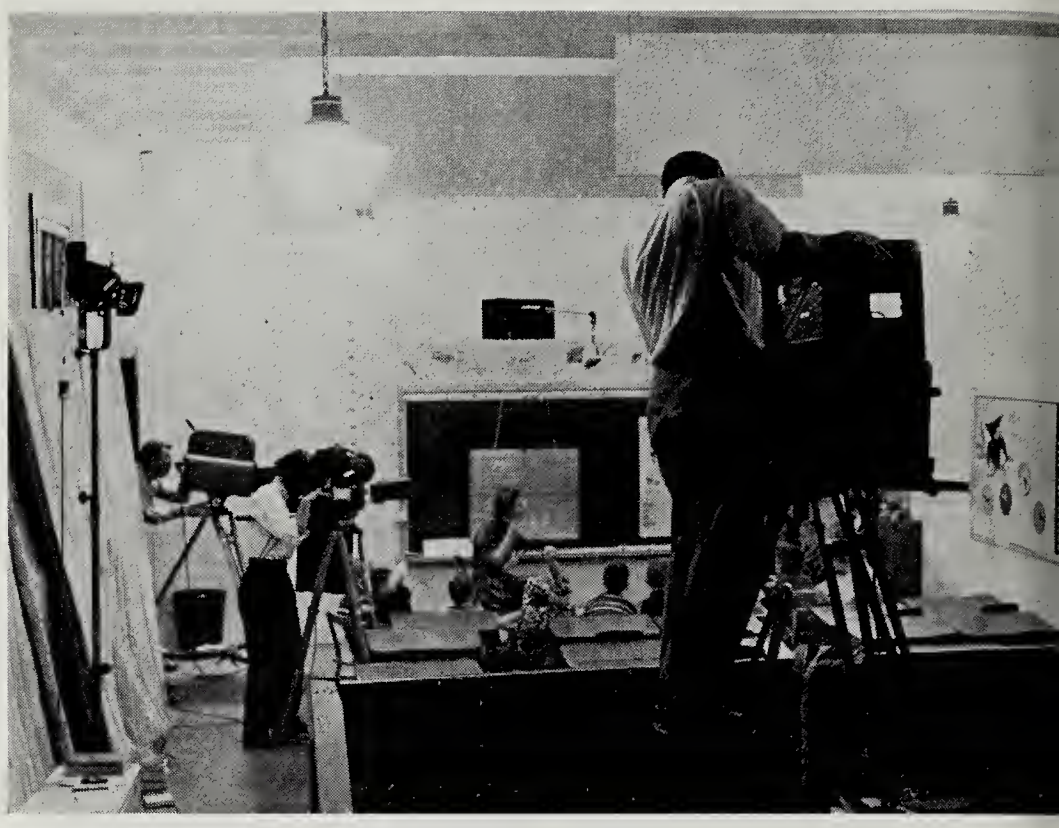
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SHOOTING A SCENE for a teaching film on reading. Blimped Cine Special camera is at rear. Note temporary acoustical treatment of walls at right—sound absorbent mats placed against the solid wall—in order to record acceptable sound.



THREE CAMERA setup used in shooting one of the SUI reading films—a Maurer for MCU's of pupils; an Auricon for MCU's of teacher; and Cine Special in blimp in foreground for making long shots. Blimp was designed and built by students.

Film Production At The State University Of Iowa

By STANLEY E. NELSON and JOHN MERCER

FOREWORD: Serious film making by and within the nation's colleges and universities has, in terms of accomplishments, persons involved, and equipment and supplies utilized or consumed, become a major activity within the sphere of motion picture production.

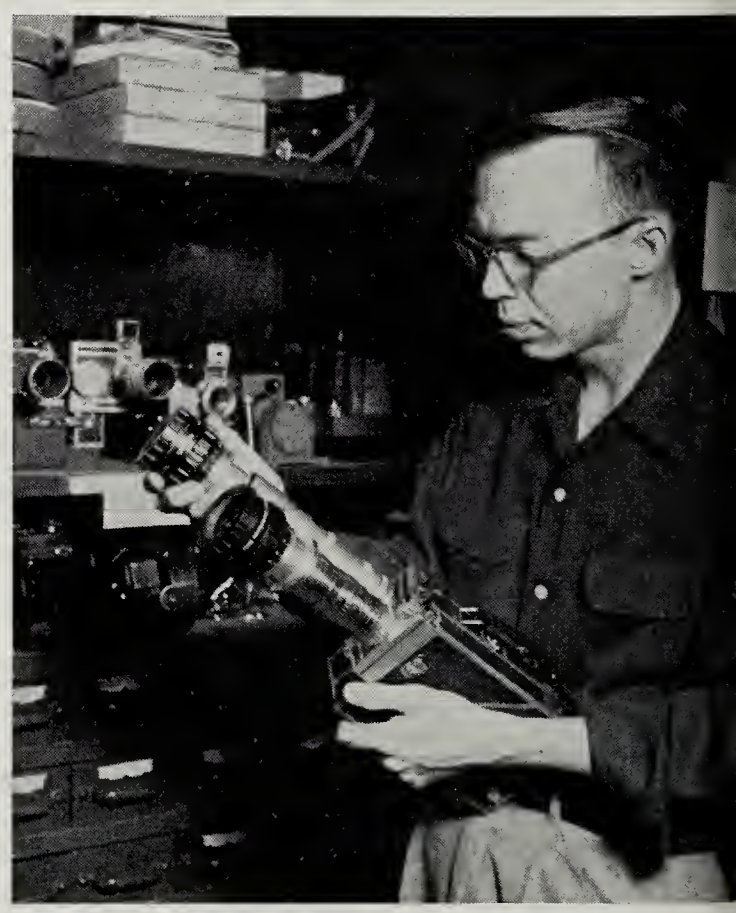
Now, in the nation's leading colleges, serious workers in motion picture photography and production are obtaining through actual experience a working knowledge of the various film production arts and crafts they could not otherwise obtain. Out of this important "apprenticeship" training will come many of the industry's future cinematographers, artists and technicians.

Recently, these collegiate film units organized the University Film Producers Association (UFPA). It publishes quarterly a comprehensive Journal that chronicles the activities and accomplishments of its various member units.

The following article is condensed from a report by Stanley E. Nelson and John Mercer entitled "Film Production at the State University of Iowa," which appeared in Issue No. 2, Vol. 8 of the UFPA *Journal*, and appears here through permission of the authors. It is a factual account of the inception, growth and functioning of a typical college film production unit, and as such should be of interest to many of our readers.—EDITOR.

THE MOTION PICTURE PRODUCTION UNIT at the State University of Iowa is part of the Bureau of Audio-Visual Instruction, which is in turn a part of the Extension Division. Other components of the Bureau are the Photographic Service, Graphics Section, Tape Recording Laboratory, and Film Distribution and Campus Service.

Dr. Bruce E. Mahan is Dean of the



ANAMORPHIC LENSES mounted on a Cine Special are used in shooting wide-screen versions of football games at SUI.

Extension Division, and Lee W. Cochran is Director of the Bureau of Audio-Visual Instruction. All the fiscal work of the Motion Picture Production Unit is handled through the accounting system of the Film Distribution Service, headed by John R. Hedges, Associate Director of the Bureau.

The Unit started as a corner of one of the rooms used by the Film Distribution Service in East Hall. Later a larger room in East Hall was used, and after World War II the Unit occupied a temporary barracks-type building. Within the last three years another building was taken over, and some space in East Hall was acquired. At the present time. the laboratory is in one of the barracks (air conditioned), the second barracks is used for an animation studio, small shooting stage, and equipment storage, and the space in East Hall is given over to the office, camera storage, editing and sound recording. The sound and editing rooms are air conditioned. The Unit does not have an adequate sound shooting stage at the present time.

Because of the lack of studio space, most of our shooting is done on location. While location work would be normal for many of our productions, it has been necessary at times to give classrooms temporary acoustical treatment in order to record acceptable indigenous sound.

Facilities for recording narration, music, and effects are very good. Three rooms are used for this purpose. In one room are located the synchronous projector and film phonographs. Next door is the recording room with mixing panel, magnetic and optical recorders, and disk playback. The room in which the narrator records is treated with acoustic tile and also serves as the Unit projection room. All partitions dividing the rooms have double-pane glass windows.

Editing rooms are adjacent to the narration recording room. While this enabled us to air condition all the rooms easily, it means that editing activities must be slowed during a recording session.

Films are produced mainly upon the request of a University department. In such cases, costs charged to the department include such out-of-pocket expenses as film stocks, lighting, transportation. sets, properties, and art. Some salaries are included in the Extension Division budget, while other operating costs such as hourly wages are paid from income.

Ordinarily at initial production conferences the purpose of a proposed film is defined, and we then decide upon the type of production which would best fit this purpose. We prepare a cost estimate based on film type and length. Sometimes funds are transferred initially. but in the case of small projects the department may simply be billed on completion of the film.

A number of films are produced on a revolving fund basis. Certain films in the field of time and motion study, secondary school reading, teacher training, and others of a general nature. are sold to other school or to industry. Income from the sale of such films helps amortize the original production cost and profit is often used to produce other subjects.

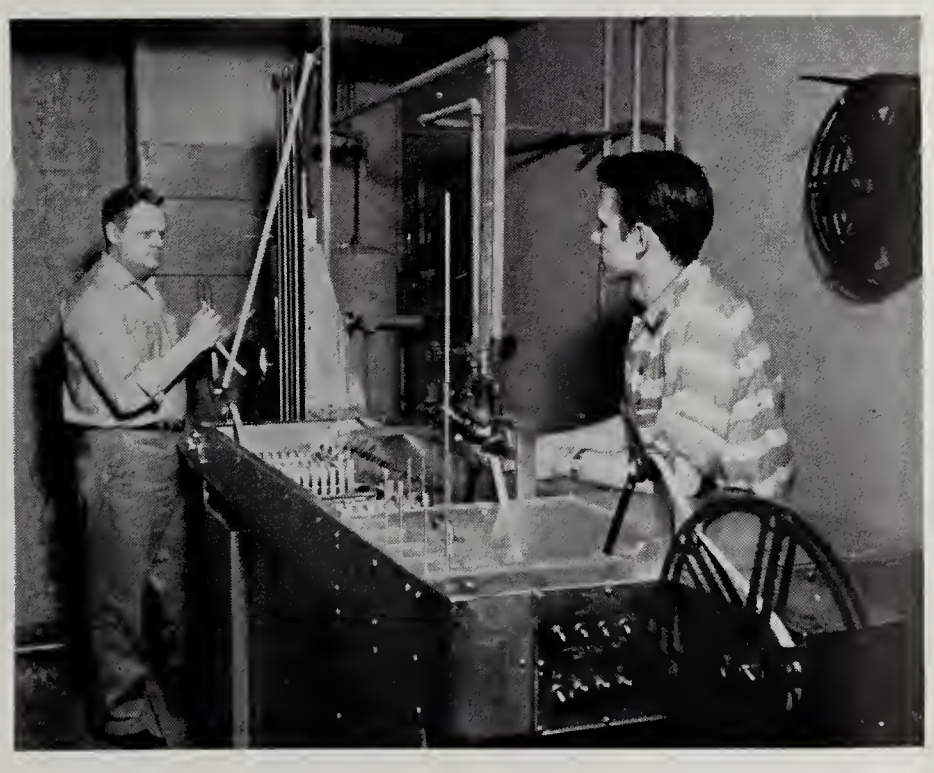
Scripts are often based closely on an outline furnished by the department. Our time and motion study films were of this type. In some cases, however, a department sponsors a film which requires some creative scriptwriting. A recruitment film, *It's Your Decision*, made for the University Registrar, was of this type.

A large amount of release footage is made from originals which were not shot to scripts. Athletic events, especially football and basketball games, are shot as film records and later given sound tracks for television release and subsequent circulation. We are now making some sound film records of

(*Continued on Page 626*)



THE UNIVERSITY'S film production unit has two Bell & Howell Model-J continuous contact film printers in its laboratory, one equipped with a PAR fader.



THE NEGATIVE processing machine is a modified EDL Model DM-7. At the present time it is used only for processing panchromatic materials, and kinescope recording negatives.



A CORNER in the University's film editing department. Other equipment includes standard Moviolas and sound print readers. Optical sound work prints are used at present.



FIG. 1—Eight Askania 35mm motion picture cameras were mounted on towers along the course and recorded the flight of the Chance Vought Crusader on color film.



FIG. 2—Mounted on trailers each with its own power plant to motivate it in tracking its object, were two Bowen cameras equipped with 10″ tele-lenses aimed straight up.

Photography Aids In Establishing Speed Mark For New Fighter Plane

By JOHN FORBES

A NEW SYSTEM of timing, in which motion picture cameras play a vital role, was used for the first time in setting the new national speed record in the Navy-Chance Vought fighter plane. Photography by twelve cameras enabled the F8U-1 Crusader to set a new national speed record over the 15-kilometer high-altitude course at China Lake, California.

The official speed record announced recently by the National Aeronautical Association was determined from photographs made by two Bowen cameras backstopped by eight Askania 35mm theodolites which also recorded the two runs. Radar tracking was used only for ground track determination as an aid to the pilot so he would not be out of lens range of the vertically-pointed Bowens. One radar locked on the plane's radio beacon signal and the other locked on the plane's skin.

At the exact surveyed start and finish lines of the course were located two Bowen cameras with 10-inch lenses and having high-speed shutters somewhat like a rotating, slotted beer can. These cameras record the flight at 30 frames per second at an exposure of 1/25,000th of a second.

As the Crusader neared the starting line these cameras were started automatically. Each picture was recorded as a narrow ¾″ strip across the seven-inch film as it moved continuously behind the revolving shutter. Along the edge of the film are 1000-cycle timing marks from which the speed record was computed.

(*Continued on Page 617*)

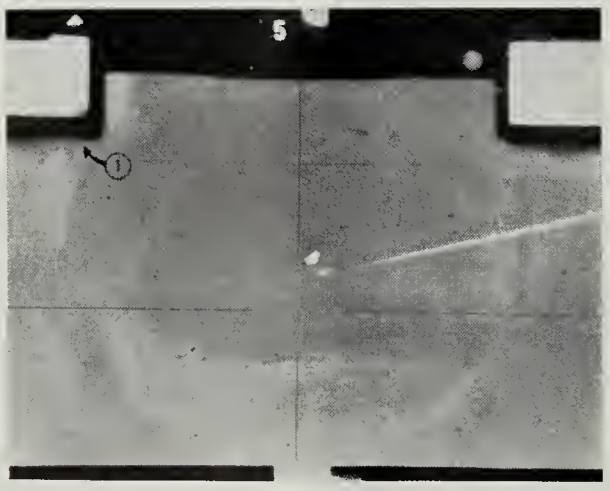


FIG. 3—Small arrow, center, points to image of the Chance Vought Crusader streaking through space on record-breaking flight. In upper left-hand corner (arrow-1) was recorded azimuth and elevation figures. Film was exposed in one of the Askania cameras.

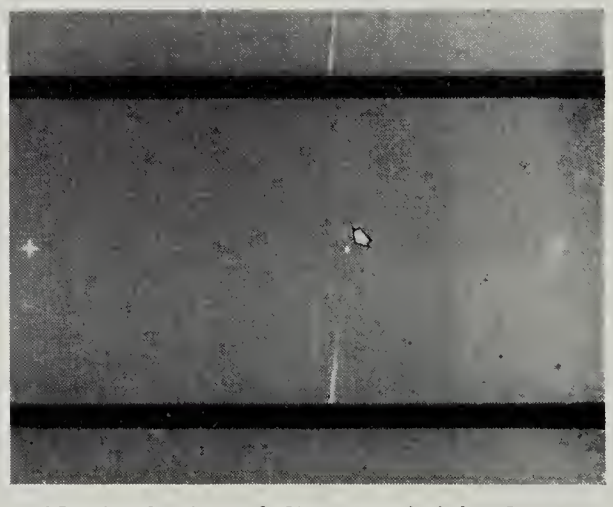
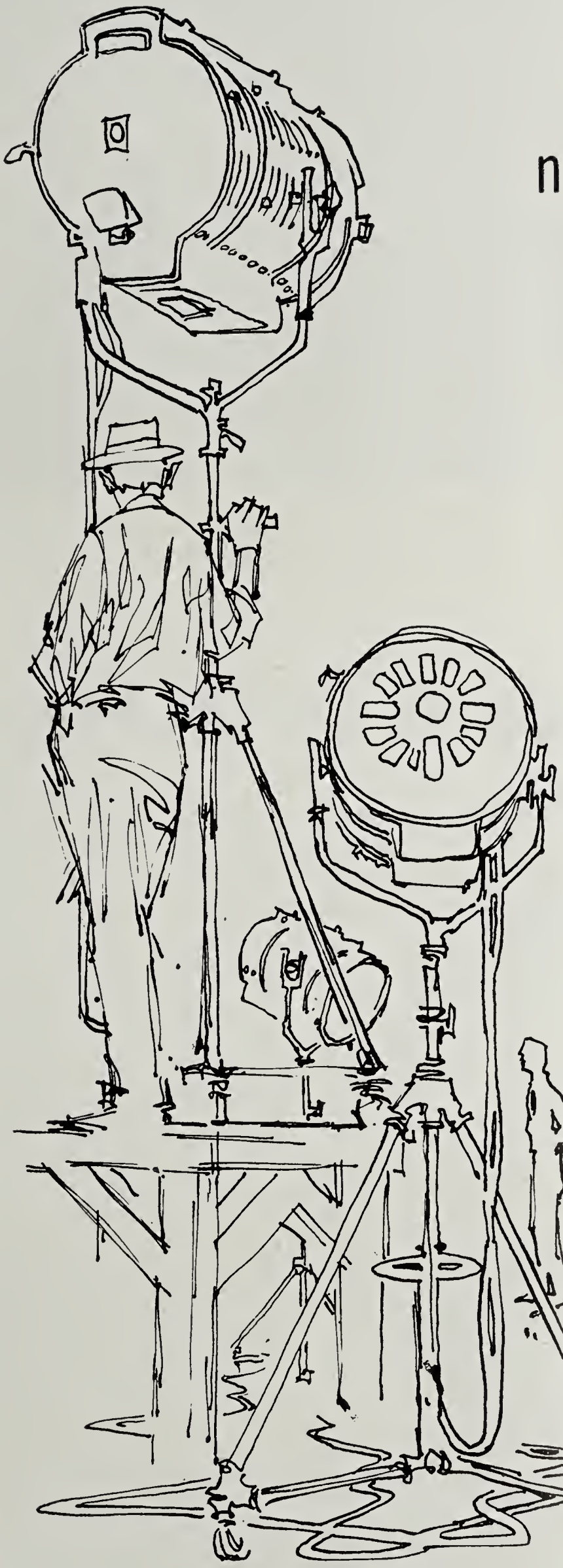


FIG. 4—Section of film recorded by Bowen cameras, showing plane (arrow, center) and vapor trail at edge of frame. Not shown are the thousand-cycle timing marks registered along right-hand edge of film from which the speed record was computed.



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IDEA for a documentary of San Francisco's scenic highlights led Tullio Pellegrini to produce a very successful 16mm color film in the CinemaScope format. Note anamorphic lens mounted on his Bolex camera.



IDEA for a film based on the fairy tale of the "Ugly Duckling" resulted in Denny Plumlee, of Los Angeles, producing an extraordinary fantasy film in 8mm color on miniature stages erected in a garage.

The Idea Is The Foundation Of The Film

The most successful amateur films begin with a solid idea that may spring from a wide range of sources. It's how skillfully you develop the idea before starting to shoot that counts.

BY CHARLES LORING

PERHAPS THE FOREMOST feature that all motion pictures have in common is that each one is based on an *idea*. Whether it be a Hollywood feature, a documentary or industrial film, or a home movie record of the family—the most successful of these has as its basis a definite cinematic idea.

It goes without saying that any attempt at film making without this basic idea results in nothing but a hodgepodge of unrelated shots that fit clumsily together at best, have no coherent meaning, and succeed only in boring an audience.

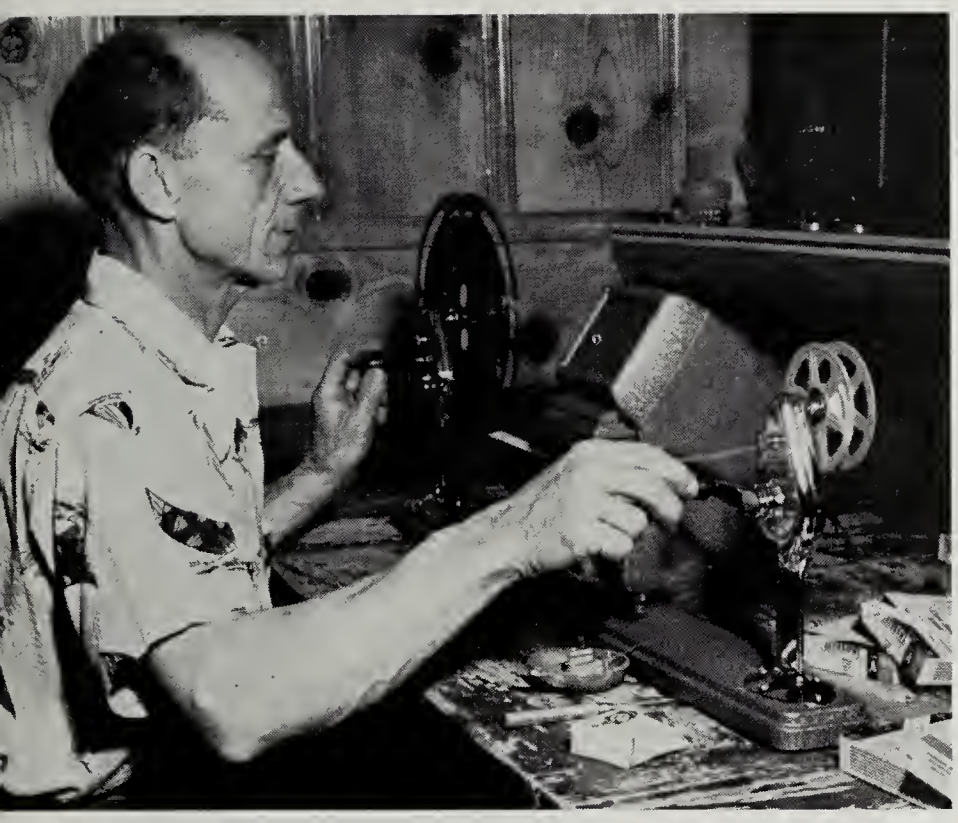
"The idea is the thing—" (to paraphrase Shakespeare). When it is lacking in a picture, all the good acting, direction and photography will not justify the time the audience must waste in viewing it.

The idea for a picture should be considered as a sort of bedrock foundation upon which is built the product of the various arts and crafts that go into motion picture production. It should be the first thing the film maker—be he amateur or professional—considers before he begins the production of a film.

The hollywood producer of theatrical films is necessarily restricted in his choice of ideas for motion pictures. He makes films for the great mass of the American and foreign public—entertainment films of a fictional nature. He is limited, therefore, to ideas that contain elements of (a) general audience appeal, (b) entertainment value, and, not the least important, (c) its box-office drawing potential. He cannot hope to please all the people all the time, but he nevertheless strives to please the largest segment of his potential audience most of the time. Since theatregoers, by and large, are attracted to the movies primarily by star names, the Hollywood producer must make sure that any story idea he is considering for production is ideally suited to the talents of the particular star players he has available. In addition, the film idea must follow any particular trend in story line prevalent at the time if it is to be a moneymaker.

For these reasons, the theatrical film producer today selects stories on the basis of timliness, its treatment of a popular theme, or based on some recent happening or incident. More recently, the major studios have turned to the book publishers and to the New York stage for story ideas to present on film.

The amateur or other non-professional movie maker, on the other hand, is bound by no such limitations. Not having to make films to please the mass public, he can devote his cinematic talents to making motion pictures for smaller, more select audiences. Depending upon the specific audience for which he slants his film, the sky is the limit insofar as the basic idea is concerned.



IDEA for a photoplaylet based on a day in the life of a tramp turned out to be a prize-winning film for Harry Ruffner, shown here putting final editing touches on the 16mm color production.

Naturally, the non-professional must first analyze his prospective audience; he would hardly make the same type of film for, say, the Parent-Teachers' Association that he would for a society of chemists or a college football team. The basic idea varies with the character and visual requirements of the potential audience.

But aside from this consideration, he is free to let his imagination roam in the choice of a picture idea and its execution. Those who would produce serious films will find about them a whole world of ready-made cinematic ideas: the life of a farm horse; the manufacture of a product; the way of life of Mexicans, Indians or other foreign peoples—and simplest of all—how you and your neighbors live.

The basic idea need not necessarily be as tangible as these suggestions; rather, it may be an emotion or character trait. Fear, anger, jealousy, courage, faith—each of these holds interesting possibilities in supplying the *idea* for a worthwhile film. Similarly, a single physical phase of nature, such as rain, fog, sunshine, etc., can provide an interesting continuity idea.

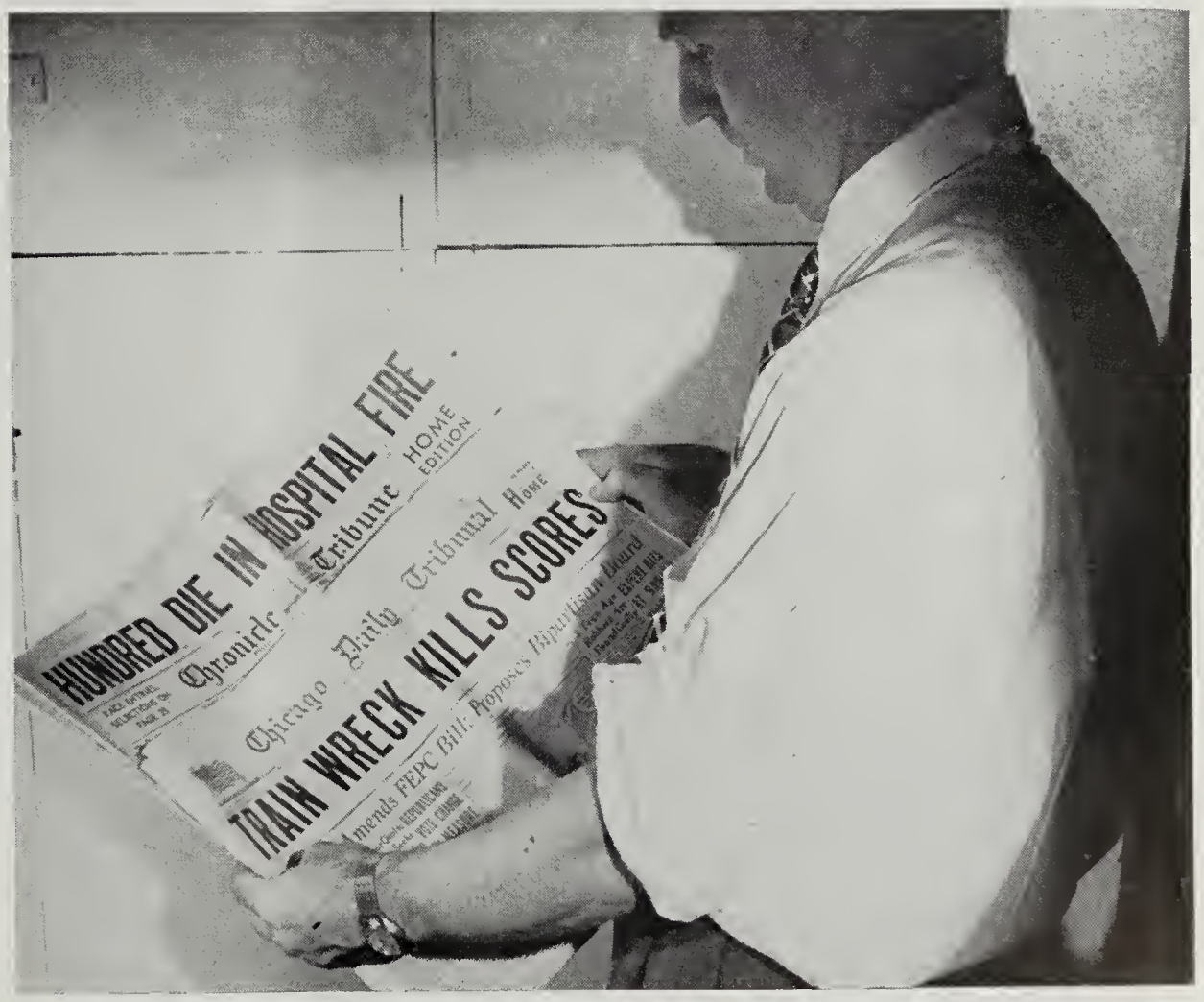
Interesting locales, such as Yellowstone Park, Yosemite, the Grand Canyon, or Hawaii offer a wealth of ideas for films; but a solid and appropriate story line should be woven into such pictures so that the locale becomes a motivating factor of the action rather than merely a static background.

Characters and prominent personalities can provide engaging ideas upon which to base a film story. The neighborhood druggist, a circus clown or a visiting celebrity suggest but a few of the personalities about whom an interesting film could be developed.

All too often the non-professional film maker feels that he doesn't dare turn a camera unless he has an earth-shaking idea in mind; that nothing short of a theme like "Gone With The Wind" is worthy of his cinematic efforts. He stands a better chance of success, however, if he selects an idea that is not too ambitious—one that is entirely within his capabilities to produce as a well-integrated motion picture. A small idea can become the basis for a big picture. I do not mean an unimportant idea, but rather one that may be compact in scope. "A Day in the Life of A Dog," to name an elementary example, is an idea that, with skill and imagination, could be developed into a highly entertaining motion picture. On the other hand, an amateur attempt to portray the civil war in 8mm or 16mm would almost certainly prove clumsy and inept. It is obvious, therefore, that one should draw upon sources around him for film ideas before venturing into fields that are unfamiliar.

When an idea is being considered as the basis for a motion picture film, there are certain requirements that it

(*Continued on Page 618*)



IDEAS for films are everywhere, but most productive of successful amateur films, perhaps, are those which spring from the pages of your daily newspaper. Not all the best film making ideas are in the bold headlines but are often found in a brief item tucked away in the corner of an inside news page.



MAIN TITLE in which text, and static and moving background elements were photographed in three separate steps by Leo Caloia.



CAMERA SETUP used in shooting title card and static background illustration, using sunlight for illumination.



RECORD PLAYER supplied motion to circular background illustration, giving effect of satellites moving through space.



CAMERA SETUP used for shooting third and final step in the 3-exposure color title. Disc rotated at 33⅓rpm, camera at 48 fps.

The Title Sets The Stage

By ARTHUR EDWIN

NOTHING SETS THE STAGE for the successful screening of an 8mm or 16mm film like a well-designed and photographed main title. When the main title looks professional, it not only commands respect for the film but suggests that a better-than-average picture is about to unfold on the screen.

Leo Caloia, one of Los Angeles' ranking 16mm amateurs, has long been noted for the superior quality of his films. His main and credit titles invariably show the same careful attention to detail that goes into his direction, selection of actors, or the dressing of sets used in his dramatic photoplaylets.

Always one to come up with new and novel ideas, the technique he used in executing the main title for one of his better-known productions is interesting. The title for "The World Around Us" is reproduced above. The accompanying illustrations show the various steps followed in producing the multiple exposure-title.

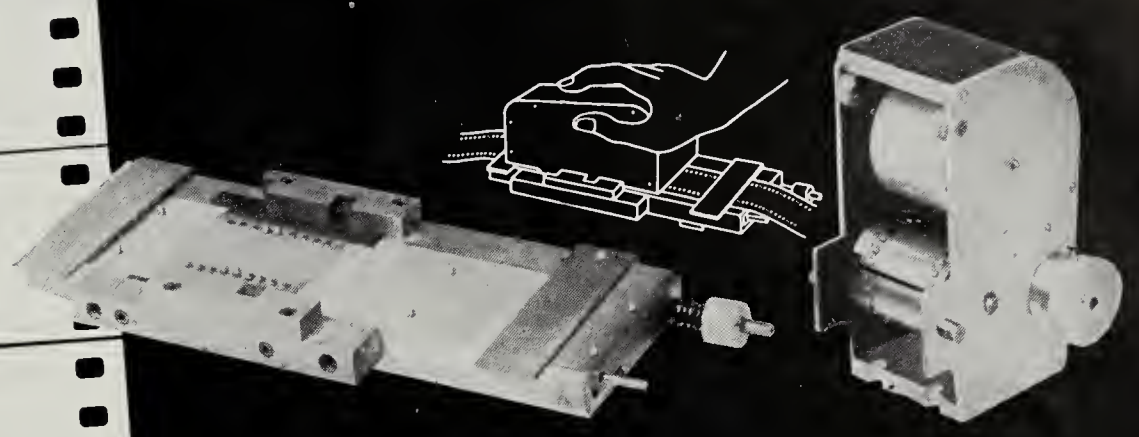
On the screen, the background appears as the moon with a space ship zooming toward it. Pictorial movement is supplied by various colored moons and satellites moving in the background. All this was accomplished in three separate exposure steps.

First to be photographed was the title card text—white letters on a black

(Continued on Page 616)

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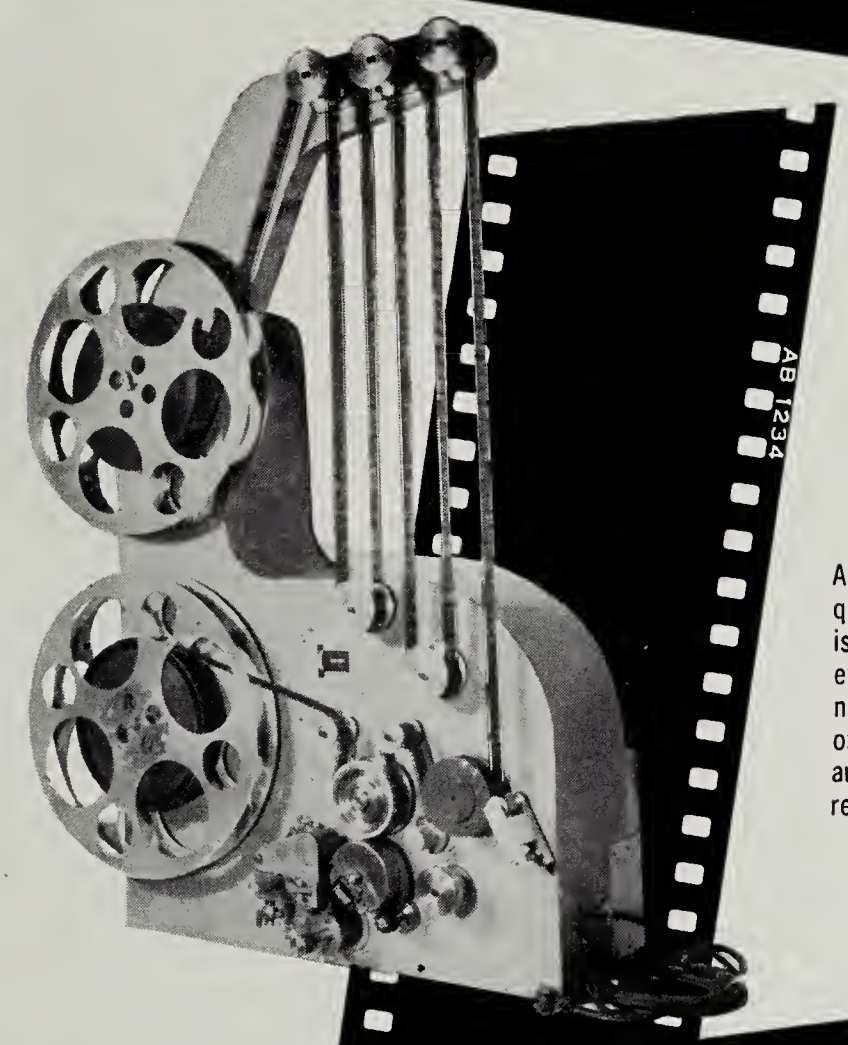


The HFC automatic film splicer uses a special transparent tape, perforated to match the film to be spliced and coated on one side with a pressure adhesive. The tape is precut and rolled onto the film in register. The unit makes butt or overlap splices. The tape is rolled onto the film automatically from a precision sprocket. Registration pins assure perfect lineup of film. Stock units are for 35mm positive film.



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OPERATION "DEEPFREEZE"

(Continued from Page 606)

Hartigan has described "Operation Deepfreeze" as the most challenging and difficult film assignment of his career as a cameraman. On Antarctica he soon found that "being a news correspondent and cameraman doesn't cut any ice down here. You become a worker, pull sleds, help cook, and otherwise carry your share of the work load." And of course, Hartigan's principal responsibility was to bring back professional sound-films of the expedition.

Using an Auricon Pro-600, Hartigan shot footage covering every phase of the adventure from the "jumping off" point in New Zealand, through the ice-breaking work of the U.S.S. Glacier, a rescue of expedition members whose plane crashed, and a dramatic flight over the geographical South Pole. On the trip over the Pole, Hartigan encountered some of the worst climatic conditions ever endured by a cameraman. This frozen-white continent at the bottom of the world, with its blinding gales and sub-zero weather, presented difficult and mysterious problems to cameraman and camera alike. Here, cameras require special winterization and supplementary internal heat to prevent the bitter cold from transforming film into a substance as brittle as thin glass. It was necessary to devise a positive method of setting and changing camera controls without using the bare hands, which can result in loss of skin and flesh in 70° below zero temperatures. Camera and amplifier batteries required special protection to enable them to deliver current at a normal rate.

The winterization of Hartigan's Auricon Pro-600 sound camera and the many other items of photographic equipment required an intensive and exhaustive study of the effects of cold on representative cameras, camera lubricants, lenses and film.

The entire field of the new silicones and low temperature lubricants was investigated, and exhaustive tests were conducted to determine which would permit mechanical movement at 75° below zero and still provide adequate lubrication. Every effort was made to accurately duplicate conditions under which camera equipment would be operating in the polar regions. Many new winterization devices were developed including tiny, fingersize electrical heaters for the camera interior designed to prevent film brittleness under extreme cold conditions.

Hartigan and other cameramen on "Operation Deepfreeze" heeded the warnings of polar photographers who had preceded them and who found that operation of any camera with the bare hands was dangerous and sometimes extremely painful. A unique method of changing camera settings was devised. Radial spokes attached to the lens mount enabled cameramen to set and operate their equipment without removing their gloves.

To provide greater safety for shipboard filming, standard gimbal-mount tripods were each equipped with an 85-pound swinging weight suspended between the tripod legs, insuring that the camera platform would remain level during the roll and pitch of a ship in heavy seas.

Through all of the hazards and problems of "Operation Deepfreeze" filming, Hartigan's Auricon sound films for NBC were the first pictures of any kind to be flown to the waiting press and television news broadcasters. In addition to the regular film coverage on TV, some of Hartigan's 16mm film frames were enlarged and used as stills for the newspapers and for illustrating this article.

The experiences of Hartigan on this Antarctic expedition will be of tremendous value to cinematographers all over the world who may brave the sub-zero cold and hazardous conditions of polar filming in the future. In addition, the 52,000 feet of color sound-film which he shot on the frozen continent are a significant contribution to the public's understanding of the "International Geophysical Year" program.

THE TITLE SETS THE STAGE

(Continued from Page 614)

background. This was tacked to the easel shown in the second photo, top row, and photographed in sunlight. Caloia finds sunlight far superior to artificial light in shooting titles. "Gives a better overall rendition," he says. Exposure on outdoor Kodachrome at 24 fps was f/6.3.

The film was wound back in the camera and made ready to record the background of moon and space ship. The background was in blue to represent the sky. The moon was orange and the space ship grey. The camera was lined up so that the moon would appear in the upper left-hand corner of the frame. Exposure, at 24 fps, was f/8 in bright sunlight. The film was then wound back for a second time and made ready to record the series of small rotating discs or "satellites."

Prior to this, Caloia cemented a black cardboard disc over an old phonograph record and painted a series of small discs of various sizes and colors along its perimeter. This was mounted on a motor-driven record player camouflaged with soft black cloth, as shown in photo No. 4. The camera was focused on

only a small area of the rotating disc so that it caught the colored satellites traveling diagonally across the frame. The record player was operated at 33⅓ rpm and the film exposed at 48 fps in order to slow down the movement of the satellites.

Almost any 8mm or 16mm cinefilmer can produce professional-like titles, following this same method. The most important factor, of course, is using a camera that affords backwinding of the film and an accurate means of counting the footage or frames wound back. Caloia used the Eastman Cine Special. Art work was produced by a professional artist following Caloia's specifications.

PHOTOGRAPHY AIDS FIGHTER PLANE SPEED MARK

(*Continued from Page 610*)

Officials of the National Bureau of Standards, after analyzing these marks as the plane moves across the 100-foot roll of negative, determined the exact time it crossed the starting line. By comparing the starting time with the time recorded by the Bowen camera at the finish, the speed was computed exactly.

A supplementary system of distance and time measurements by use of Askania phototheodolite 35mm motion picture cameras using 24-inch telephoto lenses also was used with a view to establishing it as an acceptable method for future record attempts.

Eight of these swivel-mounted German cameras (pictured in Fig. 1) were stationed, four on a side, a short distance east and west of the north-south course. Operators using telescopic sights picked up the aircraft as soon as it approached the course. All eight of the cameras simultaneously started shooting color pictures of the plane at four frames a second. In the corner of each 35mm frame was a picture of the azimuth and elevation dials of the theodolite. ("1" in Fig. 3).

The camera operators kept the plane in the lens' cross hairs throughout the run. By trigonometric analysis using film from several cameras, the exact position of the plane and its speed was determined. Results of the theodolite coverage of the speed run will be submitted in a separate report and were not official in determining the 1000-mile record, which was based on film records of the Bowen cameras.

Besides the two Bowen installations and the eight Askania movie cameras, a number of other cameras helped cover the Crusader's successful speed runs. The plane itself carried a 16mm movie camera inside its skin and recorded continuous pictures of a panel of instruments showing airspeed, altitude, outside air

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temperature, a clock, an official N.A.A. timing watch or chronograph and two Navy barographs to permanently record altitude.

A crew of Navy still and movie cameramen from ComAirPac, San Diego, took pictures from the air and at the Mojave F8U hangar to record the activities, as did civilian cameramen from NOTS China Lake and Chance Vought.

To stay in the lens-angle range of the important Bowen cameras at both ends of the flight course, Pilot Windsor had to fly within one-and-a-half miles of the imaginary flight line at 40,000 feet. In warmup flights over the course before the "Big Day," Windsor frequently was slightly off line on one side or the other. Navy radar operators on the ground coached him by radio to change his headings to get back on course.

As Windsor brought the grey-and-white Crusader to a stop in front of the hangar at Mojave and opened his canopy at the end of the flight, he held up his two thumbs in a signal of victory to his ground crews. Before the crowd of well-wishers could swarm up to greet him, officials of the National Aeronautics Association went to the plane and removed the two barographs and the film from the motion picture camera inside the fuselage, which had photographed duplicate sets of flight instruments located in a compartment behind the pilot. The film was developed in the hangar darkroom. The barographs which recorded the plane's flight altitude were sealed and sent to the National Bureau of Standards for analysis.

By noon on the day of the flight it was known that the plane officially had met the requirements of the speed run as to altitude and flight path over the course. NAA observers went back to Inyokern with the films, flight data and signed papers to make the attempt official.

IDEA IS FOUNDATION

(Continued from Page 613)

should meet before being definitely selected:

1. *The idea should be worthwhile.* Making any motion picture is a large operation, no matter on what scale it is undertaken. It involves a sizeable outlay of time, effort and money—expenditure of which is unjustified if the picture idea has not the elements of success. Its worth, therefore, should be carefully analyzed in advance.

2. *The idea should be entertaining or informative*, or both. The filmmaker should consider his prospective audience, then ask himself, "Will a film based on this idea entertain or inform that audience?"

3. *The idea should be kinetic.* The motion picture, as the very term implies, is a medium that depends upon *action*. Despite tricks that are often used by some film-makers to force movement into a static idea, the fact remains that a satisfactory motion picture cannot be made unless the idea itself possesses elements of action.

4. *The idea must be pictorial.* That is to say, it should be capable of being staged in interesting locales and settings. The word "interesting" here does not imply lavish sets and beautiful landscapes. Lines of wash hung in a tenement court may be pictorially interesting. Smoke from the chimneys of a hobo village may be interesting. The dirt-smeared faces of sweating laborers may contain elements of great pictorial interest. If these elements are present in the idea, the film has a head start toward being a success.

5. *The idea must be cinematic.* Many fine novels and plays have been written that would not make good motion pictures because they are not translatable into the language of cameras and film. Similarly, the non-professional film maker will often hit upon ideas that sound fine until he stops to analyze them in cinematic terms. The motion picture, despite its almost boundless scope, does have certain limitations, and there are some abstract ideas that are difficult to portray on the screen. The film maker should shy away from such ideas and confine his efforts to themes that, by their very nature, can best be portrayed through the medium of the screen.

6. *The idea should be practical.* Here again, the average nonprofessional film-maker tends to approach ideas that are too ambitious for the production set-up with which he has to work. If, for example, he lives in an island district, he wants to shoot a sea story. If he is working on a close budget he usually thinks it would be nice to have a "cast of thousands." Actually, it is quite possible to stay within one's limitations of equipment, locale and budget and still turn out a fine motion picture. Motion picture making is an exacting business at best; the producer, therefore, should not make it more difficult by straining limited resources to film an idea that is obviously out of reach of his production set-up.

Developing the story idea to its fullest is of paramount importance. Before he starts to shoot, even before he writes his script, the film-maker should have the idea fully developed and analyzed in his own mind. He should give the idea a good deal of thought, allowing his imagination to play with the various facets of the subject, letting the idea build up in his mind until he can see a clear mental picture of how it will appear on the screen. He should take notes, jotting

down the details as they occur to him, later cataloguing and arranging these notes to help him in production planning.

As we have said earlier, the *idea* is the foundation of the film, and the intelligent producer binds his whole production around it. Each technical process, every line of dramatic approach is keyed to that basic idea, and is discarded if it does not materially add to its interpretation. Beware of effects that lead the continuity on tangents away from the main thesis. Unity is the keynote of smooth continuity on the screen.

As the producer works mentally with the idea, he will find that it takes on shape and depth and character until finally it evolves itself into a theme. A theme is an idea that has broadened in scope to a point *where it becomes the underlying motivation of every step and process in the making of the film.*

For instance, let us say that a producer wishes to make a film based on the idea of "dust." The idea in itself is rather abstract and might be interpreted in a number of different ways. But as he thinks deeper into the subject, applying his imagination to its development, he becomes more impressed with the role that dust plays in the lives of mid-western farmers—those men of the soil living in the so-called "Dust-bowl" area where fierce dust storms destroy crops and life and fight the farmer for his very existence. After it has been broadened out in this manner the word "dust" no longer is an abstract idea; instead, it has become a vital theme for a motion picture: "Dust, Enemy of the Farmer."

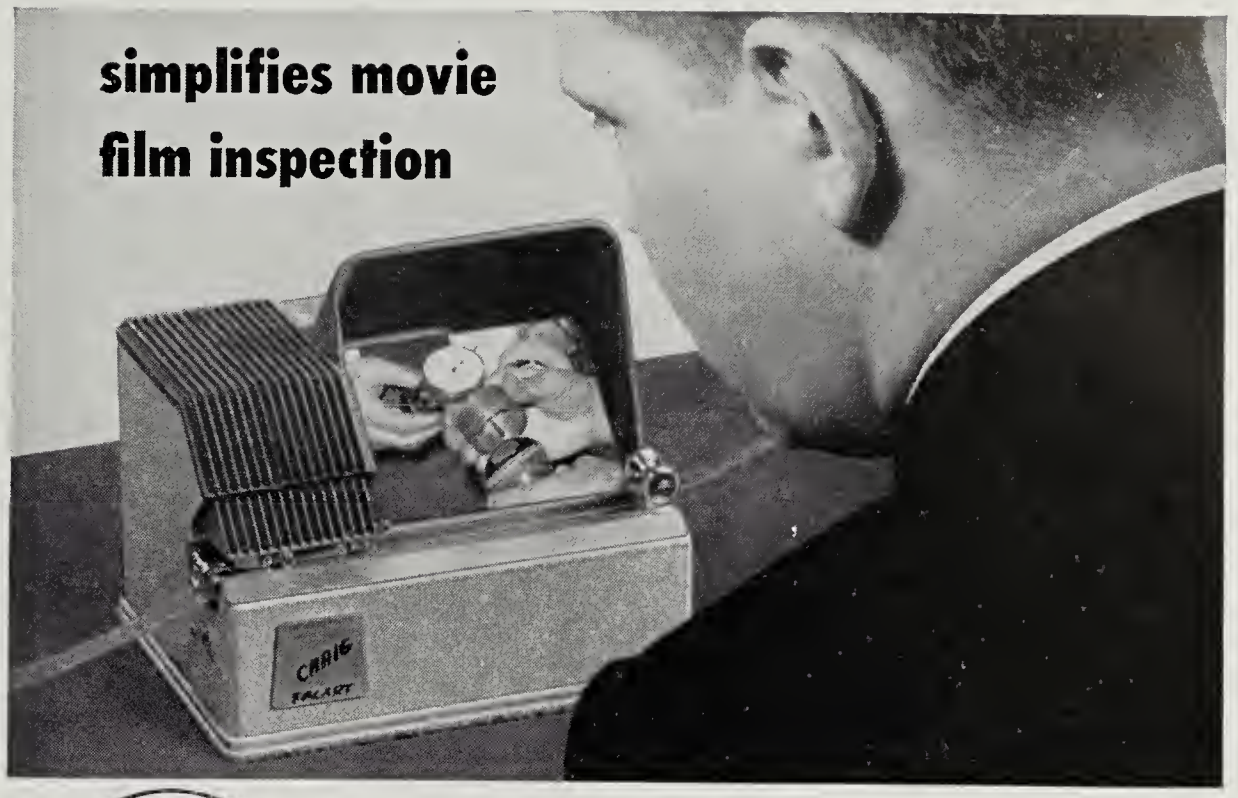
Actually, the theme as it develops from the idea becomes the factor that will determine what treatment the whole production will receive. It will dominate the succeeding steps of writing, directing, photography and cutting. Its message will be indicated in every bit of action and narration that goes into the film. If the film-maker keeps his central idea constantly in mind throughout the various steps of production, the resultant production will have a directness and unity of approach that will make for effective cinema.

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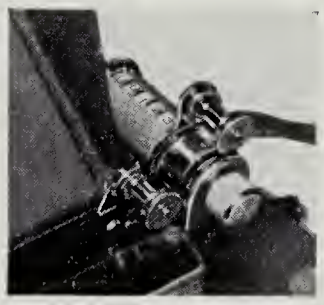


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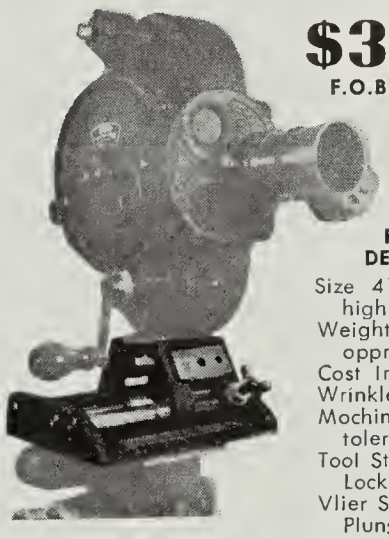
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STUDIO LIGHTING LIGHTS DEMO CONVENTION

By George Lowell



THE CONVENTION hall was illuminated with banks of 500-watt and 1000-watt reflector floods, which produced a glareless, shadowless illumination ideal for newsreel and television photography.

PERHAPS NEVER before in the history of newsreels and television has the lighting of a public event provoked so much attention as the unorthodox method of lighting introduced by Bob Duggan of The Studio Lighting Company at the 1956 Democratic National Convention in Chicago. Before the advent of Tri-X film, lighting the convention was always a "Gone With the Wind" production due to the high footcandle requirements necessary for the slower film.

The floor lighting in the International Amphitheatre this year was done without the use of any lighting units normally employed in motion picture and television studios. It was an innovation and it worked.

At the time of the two Conventions four years ago, which was also a Studio Lighting Company job, Tri-X was not available and 225 footcandles was the order of the day. Ot the 1956 Convention, cameramen agreed 125 footcandles of light would be ample. To achieve smoothness together with all-over coverage, using previous lighting methods, a great many studio-type, high wattage, motion picture lights would have been required—even the special lights that were built for the 1952 Conventions—and would have raised the footcandles and the heat unnecessarily.

Duggan said, "With the low light-level requirements of Plus-X film, why make it a big project? I just nailed a bunch of 500-watt R-40 and 1,000-watt R-60 reflector floods to some two-by-four's and souped up the voltage on the transformers feeding these 1,000-hour globes and we had 130 footcandles of light. The effect was as though there was a giant 150-ft. long fluorescent tube on each side of the hall. The light was totally shadowless with a complete absence of glare."

Rigging the featherweight units was a breeze, according to Duggan, The only tough part was feeding the north bank of lights from the transformers at the south end of the building, which required several thousand feet of 4/0 cable laced through the girders on the roof. This whole project, he said. was made possible by the cooperation of Bob Benson, electrical head of the Amphitheatre, who arranged his circuits to permit a voltage raise on a particular bank of transformers that would not affect the rest of the Convention hall.

The Studio Lighting Company has lighted a total of eight Democratic or

Republican National Conventions, the first being in 1932, when for the first time, 10,000-watt incandescent globes were used on a political convention.

Ninety-eight R-60, 1,000-watt and one-hundred seventy R-40, 500-watt globes were used this year—a total of only 1,525 amperes on the floor. Additional lights on the press section, adjacent to the podium consisted of four 10's and two 5's. The floor light read 130 footcandles dead center and increased to about 160 on the side aisles. Front light on the speaker, 250 footcandles; back light, 320.

The simple and direct approach of this unique type of lighting brought nods of approval from both the newsreel and television cameramen who recorded this event, and Duggan has been told to anticipate lighting the 1960 conventiion for color—both film and TV.

QUESTIONS & ANSWERS

(Continued from Page 584)

duction that so impressed him, it is impossible to evaluate it or make comparisons. Japanese cameramen have turned out some fine color pictures, just as have cameramen in other countries. But it is hardly likely that any of them have any secret gimmick by which they produce the extraordinary results the reader has described.—*Arthur Miller, A.S.C.*

Q What is the best method of achieving a night effect with regular Kodachrome when shooting in daylight? Please name the proper filter to be used, if any, and the exposure you would recommend.—*R.L.H., Princeton, N.J.*

Use Type A Kodachrome film without the Wratten No. 85 daylight compensating filter and decrease exposure one-half stop. If this decrease in exposure proves inadequate for the effect desired, the scene may be made darker by the film laboratory making your duplicate prints—*Walter Strenge, A.S.C.*

Q We are in the process of producing an educational film in color, which calls for a storm scene with lightning flashes. This will be filmed with a Cine-Special camera using Commercial Kodachrome. Any information you may be able to give on procedure that should be followed to produce the storm scene will be appreciated.—*C. J. T., Lansing, Mich.*

If you shoot with 3200° Kelvin illumination, you can obtain a satisfactory lightning effect by using a 5K globe in a lamp with the front glass removed, flashing it on and off by means of a dimmer switch. If you use an arc light for illumination, a good flash effect can be obtained by jumping the carbon gap back and forth. *Walter Strenge, A.S.C.*

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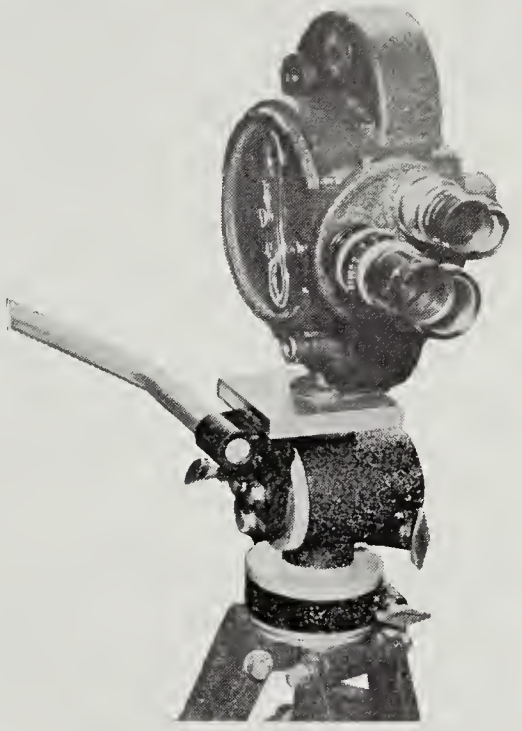
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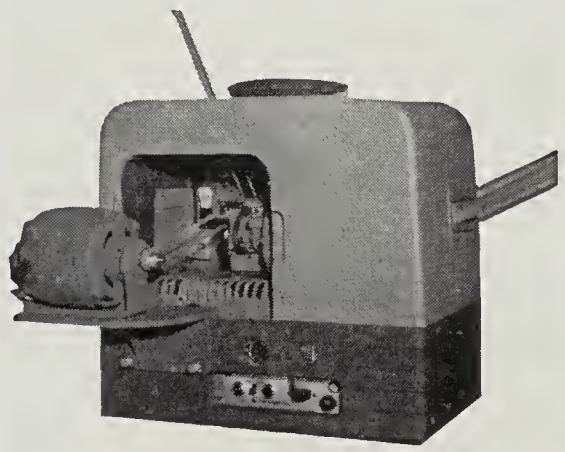
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TIME LAPSE AND TELEPHOTO

(Continued from Page 599)

color films. Armored with special suit and head mask for close work in wild bee trees, Jewell nevertheless was repeatedly stung through seams and occasional exposure.

Too many injections of bee venom, says Jewell, can be serious and even kill a person if closely spaced. His many months of patient invasion of wild hives, he says, called for more nerve than some of his previous assignments with dangerous animals.

Robert Crandall, peer of nature photographers, is a recognized authority on ants and has done much original search and research on this great insect family, reflected in one of the most important segments of "Secrets of Life." In addition to extensive field-study Crandall observes his subjects under an elaborate photo-microscopy set-up in his home studio and garden. His discovery, in a 16-foot deep excavation, of the wine-colored honeycask ants and their strange martyr repletes is a distinguished feat of original photographic research. The repletes, not heretofore associated with this species, stuff themselves until they are enormously swollen honey containers and thus become lifetime servants to their fellow workers. Warfare without quarter, sharp division of labor, protection of young, growing and harvesting of vegetation, separation of reproductive functions, mass maneuvers—these and other fascinating aspects of ant society take on intelligible meaning under Crandall's probing movie lenses. He also shared top camera credits in "The Living Desert."

George and Nettie MacGinitie (husband and wife) are noted marine biologists. He is a former Stanford University professor of this science and did research for the Navy in Alaska. At present he is with the California Institute of Technology. For "Secrets of Life," the MacGinities photographed the camouflaged decorator crab, the flower-like shellfish called Melibe, the walking kelp fish, jellyfish, barnacles and other marine life rarely seen even by exploring naturalists.

Murl Deusing, who has contributed many interesting features of the True-Life Adventure series and who is connected with the Milwaukee museum, this time comes up with an amusing eavesdrop on the life of the stickleback fish, the hunting prowess of the dragonfly nymph and other tiny marine "monsters," beautiful and deadly.

John Nash Ott, Jr.: In searching out nature's provocative mysteries for Walt Disney's amazing new True-Life Adventure, none of the 18 naturalist-photographers who share the camera credits had a greater part than John Nash Ott, Jr., dean of time-lapse cinematographers and one of America's leading botanists.

In his Winnetka studio and gardens Ott has spent years acquiring his knowledge of plants and flowers and the special techniques he has perfected to peer into the cell functions of growth and reproduction and the mysterious chemistry of color, perfume and harbored intelligence of seeds which, by ingenius device, have kept the earth green and habitable to man for millions of years. He has brought time-lapse photography to its highest perfection as an instrument for the study of plant life.

Most of his implements are of his own invention, housed in a laboratory where a complex of cameras, lights and timing devices are arranged among a variety of growing things to have their portraits made and their secrets unveiled. Others are in open gardens and orchard.

His most fascinating contribution to Disney's new chapter on nature's visible wonders is the microscopically observed pollinating process of field corn. In a remarkable camera exploit, every phase of the beautiful primitive procreative act is followed from the wind-shaken anthers down the silken canals to the ripening kernels and an abundant field crop.

Other scenes of botanical beauty show the actual ripening of strawberries, cherries, tomatoes, red peppers and pumpkins in the gorgeous Technicolor production in the same time-lapse method.

The marvels of this kind of period-timed cinematography also pose its special problems. Each subject, Ott explains, must be set up in accurate focus, with just a slight margin for unpredictable twist to sunlight and by moisture. The flower or fruit will be photographed on one frame of camera film once an hour, all around the clock, until the desired development or maturity has been recorded. In between times, the subject must be given sunlight and carefully regulated temperature. The lighting is so synchronized with the camera shutter that it flashes on only for the fraction of second the lens is open. By this means, all scientifically calculated, a ripening fruit will seem to have grown smoothly to full size and color in a few magic seconds, while it may have taken as many days or weeks actual growth in the garden.

For "Secrets of Life," Ott's mystery-probing, interval-timed cameras were kept busy night and day for months, working through seasons from bud to seed.

When orchard fruits are time-lapsed, the branch with bud and flower must

be housed in a specially designed box attached to the tree under conditions even more complicated. Every frame of film exposed then must be flashed within automatically regulated containers governing sunlight, wind, temperature and the artificial light.

Thus Ott has clarified many mysterious plant processes for scientific research and probed close to the ultimate secret of cell life. He has devoted his expert knowledge and technical skills not only to entertainment and educational films but also to the medical profession, dealing always with some of nature's most beautiful product and astounding intelligence.

William A. Anderson's main effort is on a comical note—the grotesque performance of the angler fish who lures other finny adventurers within reach of his great snapping jaws by dangling a worm-like appendage in front of his mouth. Anderson also shows floral traps designed to capture insects, in a turning of the tables on the animal world.

Dr. Tilden W. Roberts, resourceful wildlife photographer as well as noted natural scientist, served as biological consultant for "Secrets of Life." He has been connected in scientific departments with the University of Illinois (Ph.D), U. of Tennessee, U. of Southern California, the Moody Institute of Science and was also biological consultant on Disney's "Nature's Half Acre." For "Secrets of Life" he captured on film the little archer fish who shoots his insect prey down from overhanging weeds with a well directed drop of water. Roberts also filmed the diving spider and her underwater nest of air bubbles.

Dr. William M. Harlow, official of the New York State Division of Forestry and a specialist in stop-action study of wilderness growth, discloses the strange devices of seeds and cone to replant their kind with botanical "intelligence."

Claude Jendrusch and *Arthur Carter* provided the majestic background scenes of volcanic lava flow squirming its red flood into the hissing sea, photographed during a recent eruption in Hawaii.

Jack Couffer stalked the Fiddler Crab and recorded his amorous and humorous antics in luring the hesitant female to come down and see him some time. Couffer also got material in the Galapagos Island for a future Disney True-Life.

Fran William Hall depicts odd relationships between plants and insects in a world where a blade of grass is tall as a sugar pine in the magnosphere.

Rex Elliott's enchanting study of

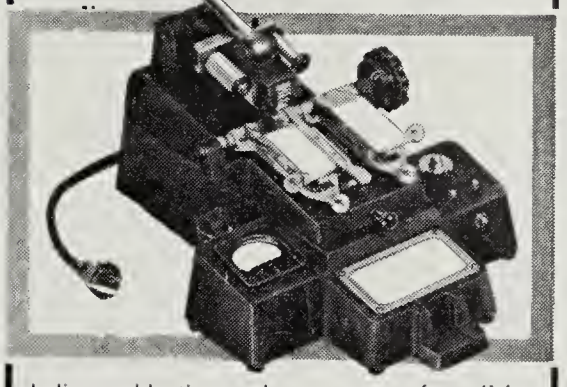
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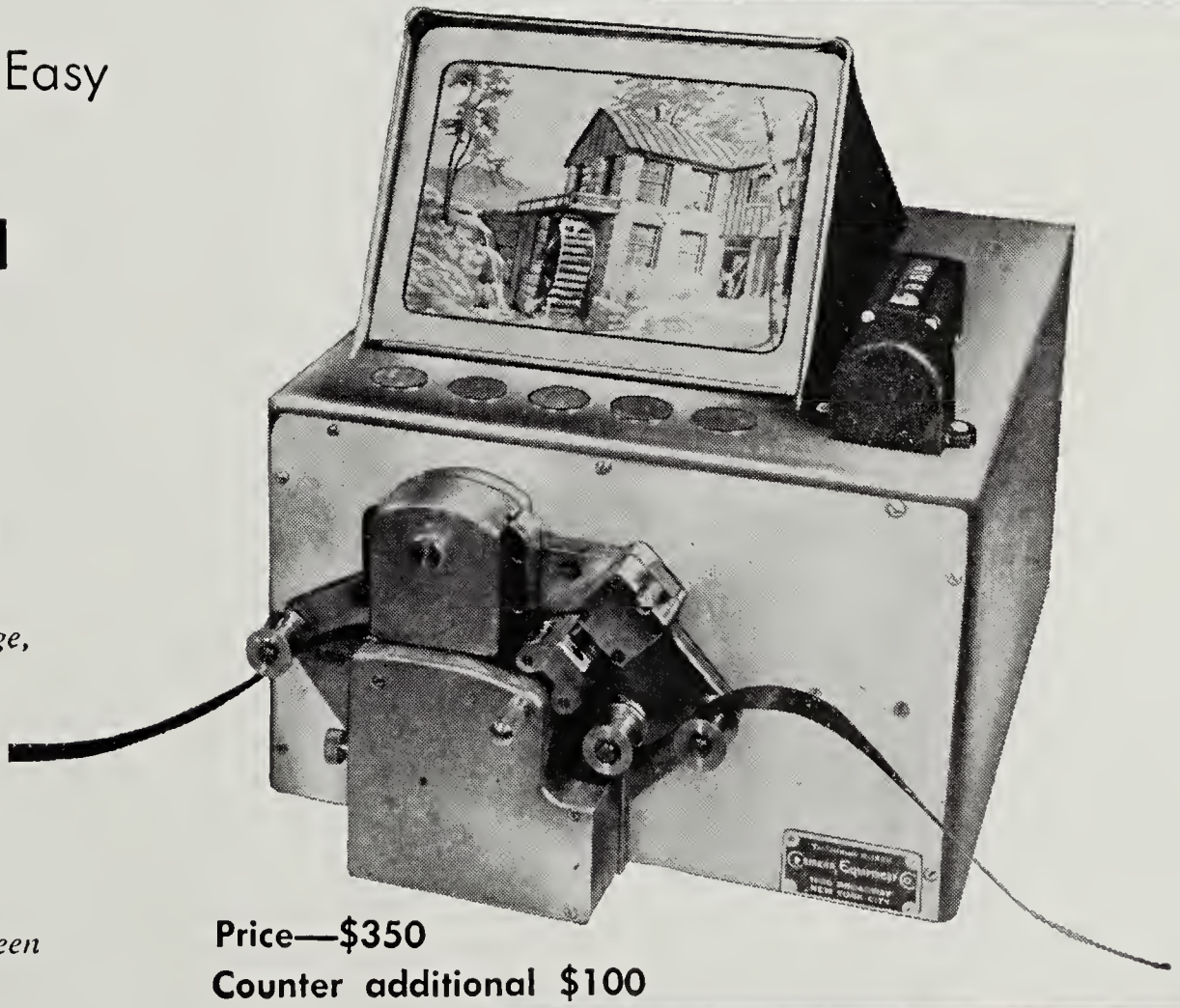
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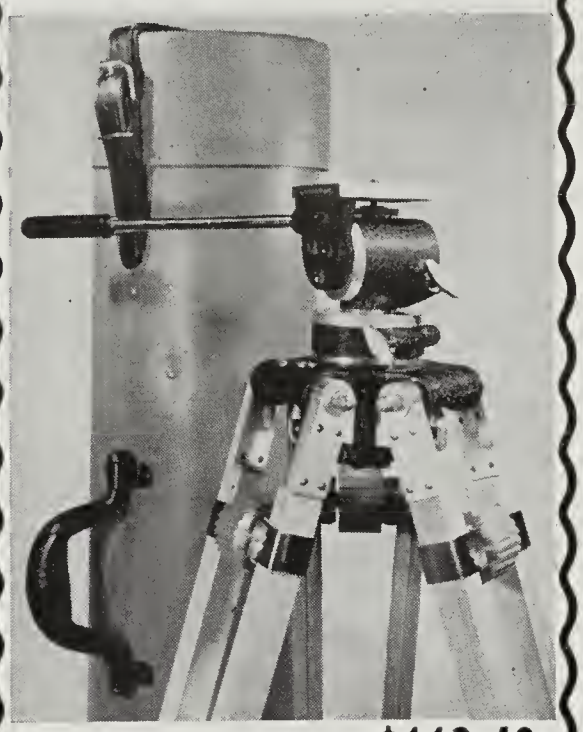
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Vincent J. Schaefer's magnificent cloud-scapes, illustrating cosmic forces related to the endless creation of nature's variety, add an awesome note to the splendid presentation.

These are the searchers and the finders of nature's hidden wonders whose composite exploits have provided Walt Disney with the substance for his consummate achievement in the True-Life factuals, certain to be another candidate for Academy of Motion Picture Arts and Science Awards.

FILMING TV IMAGE

(Continued from Page 605)

equipment made expressly for the purpose. Here the tube from which the image is recorded is smaller and of a different type, usually coated with phosphors rich in blue and ultra-violet radiations. This permits the use of fine grain positive-type emulsions for recording. The brightness range of kinescope tubes is about 1 to 30.

Because the images on a kinescope tube are relatively flexible as to contrast, this is sometimes an advantage to the cameraman making a TV recording. As the monitor operator desires, the contrast can be increased or decreased, made brighter or darker, turned from left to right or upside down, or converted from positive to negative simply by reversing the polarity of the circuit.

The smaller the kinescope image—that is, the smaller the kinescope tube that is used—the better the resolution and clearer the picture. For this reason, only the center area of the kinescope tube is used in order to eliminate distortion that might occur in the curvature of the tube. There is a five-inch flat-faced tube commonly used on which the image is kept to a dimension of 2¼ by 3 inches in the center. Where 10 and 12 inch tubes are used, the image is decreased in size to about 4 by 5 inches, again utilizing the flatter surface of the center of the tube.

Since a negative picture can be produced on a kinescope tube, direct-positive recordings can be made by simply photographing the image without reversing it.

When TV recording (or kinescoping) is done with negative film, in order for the projection prints to be in the correct emulsion position, the direction of the horizontal scan is reversed thereby "turning the image around" with respect to left and right. This applies only when double system sound is used.

For kinescoping, 16mm film is most commonly used because of the lower cost of the film stock and processing, and for the safety factor inherent in the non-flam film base. Engineers have found that 16mm fine grain film, given proper processing, can produce excellent picture quality, and since the costs involved are only about one-third as much as in the case of 35mm film, the use of 16mm negative is well justified. Fine grain sound recording film and positive print stocks are therefore most commonly used. All film supplied to television stations must be on safety base; this applies to both 16mm and 35mm negative and positive stocks.

For kinescoping, 16mm film can be had in lengths of 1200 feet upon special order; the maximum length in which 35mm film is supplied is 2000 feet. Three rolls must be spliced together to produce the 6000 foot roll required for 1 hour of television recording.

Following are specifications of film most commonly used for television recording:

Ansco: Ansco's Fine Grain Positive for making direct positive recordings with 16mm kinescope cameras. (No type number has been assigned to the film as yet.)

DuPont: DuPont's Fine Grain Master Positive Film, Type 628 (628A for 35mm) is recommended for all kine-recording purposes. Differences in contrast of this versatile emulsion can be controlled in development.

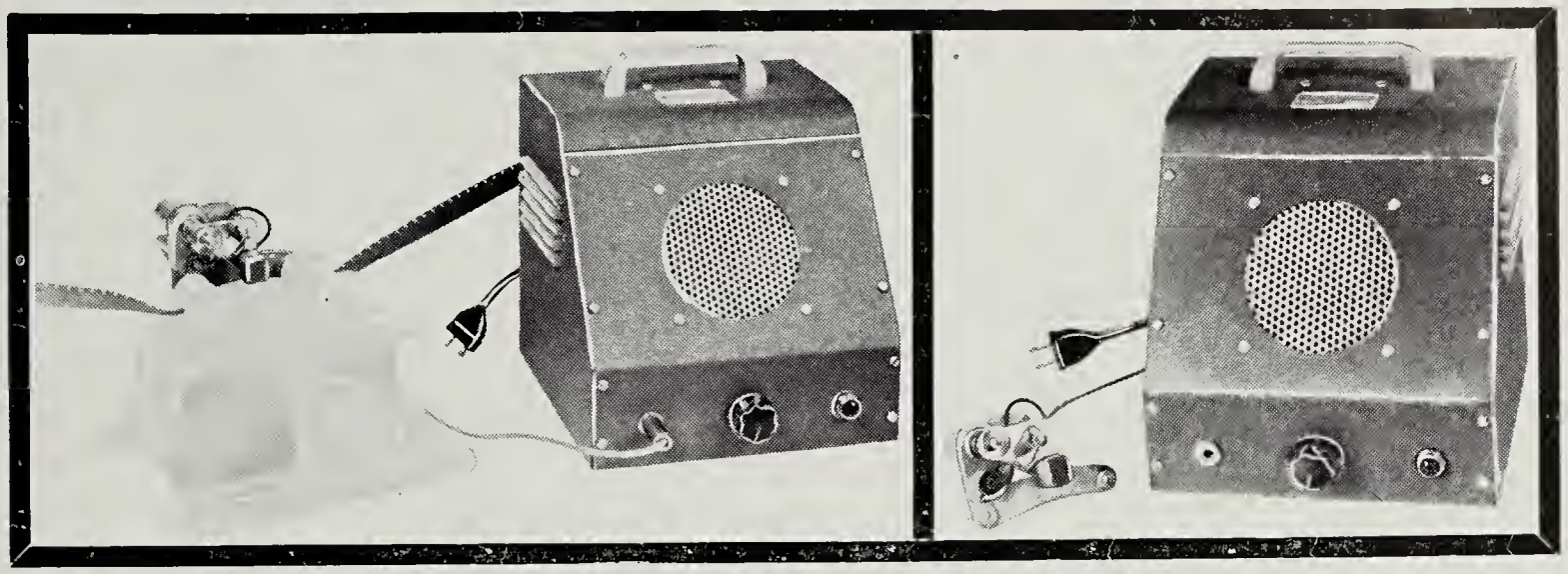
Eastman: Eastman Television Recording Film Type 5374 and 7374 (low contrast characteristic) is recommended for making a negative from which other prints will be made. Eastman's Fine Grain Release Positive Film Type 7302 (high contrast characteristic) is recommended for making direct positive recordings, and for single system cameras having variable area sound.

To obtain the correct exposure, a number of preliminary steps are required. The range over which the kine tube will produce uniform changes in brightness is first established. The maximum brightness of the kinescope tube, before resolution falls off, is also noted. The maximum density beyond which a photographic emulsion will begin losing its resolving power is also ascertained. Within these limits a determination is made of the maximum tube brightness which will give an emulsion density

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equivalent to that found just below the shoulder of the H&D curve when the film is developed to a predetermined gamma. The beam current required to obtain this brightness is read on a meter and becomes the setting for correct exposure for that particular kinescope tube, emulsion, and laboratory-technique combination.

After the above procedure has been completed, preparation for an actual recording is done in the following manner: The "black level" is adjusted by eye until the retrace lines just disappear. With a video signal equivalent to maximum brightness in the picture being fed into the system, the video control knob is turned up to obtain an all white raster. The beam current is then increased until the brightness level —as previously determined—has been reached. The level for correct exposure having now been arrived at, the test signal is removed, and the camera is now ready to receive the picture image.

Numerous tests have indicated that the same processing techniques which have become standard for theatrical motion picture films also produce optimum results for television recordings Most film laboratories today are so thoroughly versed in the requirements of television films that this phase of producing a kinescope recording can be left entirely in their hands. **END**

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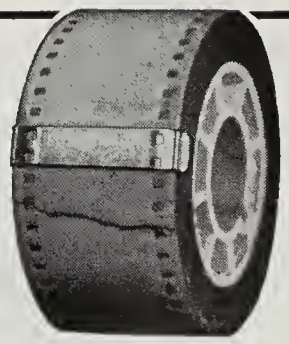
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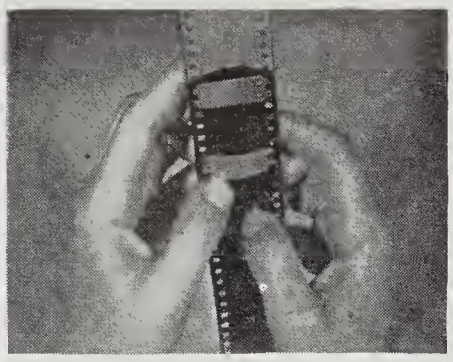
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GUIDED MISSILE CAMERA

(Continued from Page 605)

The new 16mm camera, trade-named Fastair is the first high-speed missile camera specifically designed to record the flight characteristics of guided missiles, to augment ground tracking of missiles by photographing the ground or instruments on board the missile, and to provide information for analysis on the response and accuracy of sensing mechanisms.

The use of the Fastair camera is not restricted to missile studies, but can be used in other related fields such as aircraft gunnery, gunnery training, the study of mechanical linkage, flight characteristics, fluid flow, instrument readings, stress, strain of aircraft and components either in wind tunnels or in actual flight.

The Fastair uses a rotating prism. A single, battery-operated motor drives the few moving parts. Camera speeds from 12 to 600 pictures per second are dependent on motor and voltage applied. The Fastair is small and compact enough (13 15/64″ long, 4 17/32″ high, and 3 35/64″ wide) to meet limited space within a missile; rugged enough to withstand severe vibrations, impact, shock and extremely high "G" loads and yet weighs only 8 pounds. The camera is provided with 50′, 100′, or 200′ magazines using 16mm high-speed film.

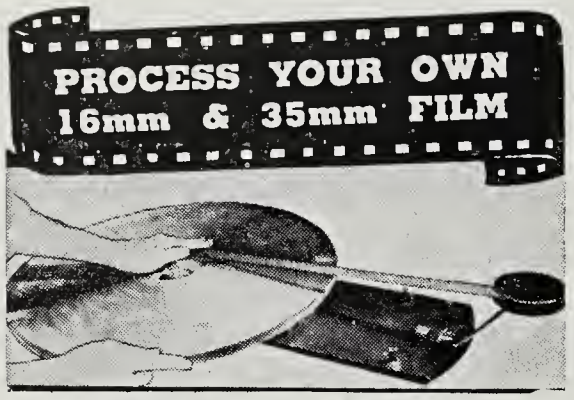
FILM PRODUCTION AT UNIVERSITY OF IOWA

(Continued from Page 609)

regular University dramatic productions for use in studies of play direction. In addition, we often shoot a film to certain specifications without a formal script. One example of this type was a hidden-camera film involving facial expression and emotion.

We have a Maurer camera with Kodak lenses and the new Maurer blimp. So far we have used only the 400-foot magazines. The camera is used on an Auricon tripod. We use the Maurer as a studio camera and as a title camera because of its accuracy and the ease it affords of making fades and dissolves. We also use the Maurer for covering basketball games because of the need for a motor-driven camera for long takes.

We have four Cine Kodak Specials (plus some out on loan), five 200-foot film chambers, and seven 100-foot film chambers. We use the Cine Kodak Specials for football because they can be wound after each play and are easy to carry to out-of-town games. Also,



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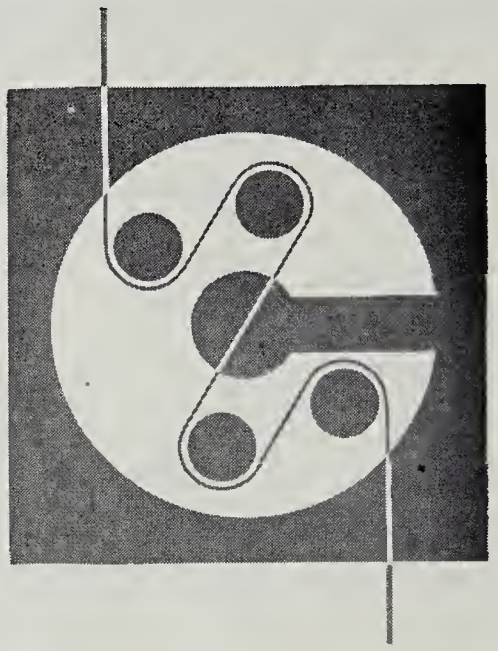
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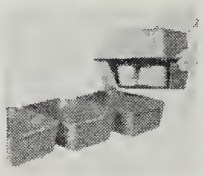


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A few years ago we designed and had built several special sports finders for use with the Cine Kodak Specials at football games. The finder is essentially an open frame and pupil finder. The frame slides back and forth on two rods mounted on a bracket which fits under the camera. The rods are marked for frame positions for lens focal lengths of from one to six inches.

We also have a number of cameras of the Bell & Howell 70-D series. These are used for a wide variety of purposes, such as field work at sports events, television news coverage, and as loan cameras for staff members. We also have a Bell & Howell high speed (128 fps) camera which is used mainly in shooting movies for athletic research. One Cine Kodak Special is set up permanently as an animation camera. The single frame motor and clutch were made by National Cine Equipment, Inc. We had the animation stand built on campus. We use a standard peg board which is duplicated in the Graphics Section, our source of titles and animation graphics. We also do some animation work from drawings prepared by College of Medicine artists.

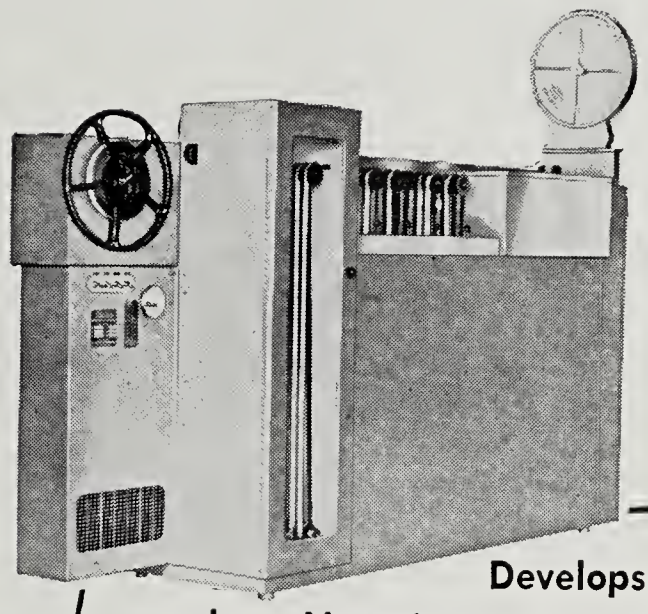
We have a large selection of lenses, mostly Bell & Howell and Kodak, along with our two new anamorphic adapters.

We use Professional Jr tripods for the most part, but in the stadium we have permanent mounts installed using Graflex pan-tilt heads.

General custodianship of all cameras on the campus lies with the Bureau of Audio-Visual Instruction, although most cameras are permanently assigned to various departments. Occasionally the Unit borrows a camera for a special purpose. In shooting the recent productions at the University elementary school we used in Auricon-Pro which is regularly assigned to the Television Center.

We are now recording all original sound magnetically. Most of our sound is recorded on our Magnasync 400, but we plan to use an Ampex for narration recording. Quarter-inch tape offers economies in cost and storage, and in addition it can be edited easily so that narration fluffs can be corrected quickly.

Intermediate optical sound tracks are produced on a Maurer optical recorder which we no longer use for location work. At the present time we must mix from optical playback tracks, disks, or tape, and we have two Maurer film phonographs for this purpose. We have rigged a loop tree for one film phonograph for playing back crowd noises. We hope to obtain magnetic dubbing



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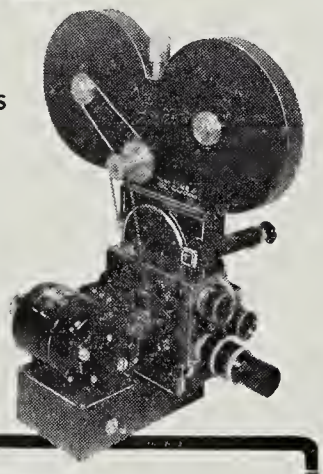
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equipment in the near future. We have been using an RCA D-77 microphone for most work.

Our mixing panel is a Maurer to which we have added a control panel which holds master switches for controlling various equipment. We use an Ampro projector to which a synchronous motor has been added. The Ampro, film phonographs, and optical recorder can be started and stopped by a common switch.

Most of our productions are shot on panchromatic negative which has latent-image edge numbers. These edge numbers are printed to all workprints as a matter of general policy.

Various editing procedures are used, but basically we employ the following method: We screen workprints first, make notes about "keep" takes, and then run the workprint through our Moviola. The outtakes are run onto the picture take-up reel, and the keep takes are run into a bin, then rolled up on the Moviola spindle with the slates head out. Each roll is taped, numbered, and hung in sequence on a peg board. Then the rolls are spliced together and the film is screened and marked for a rough cut.

To obtain workprints of color originals, we make a duplicate negative and a positive print on which the original Commercial Kodachrome edge numbers appear. This is much faster than sending the original away.

We usually use two viewers for matching action. The tail of one shot is placed in one viewer, and the head of the next shot in the other.

Background music and sound effects are taken from a number of sources. We have a small Boosey & Hawkes disk library. When some sound is to be laid in for rerecording, we may record from disk to a positive playback track (density 1.0). From this we can print a negative which we use as a workprint. Since our Moviola has only one sound head, we are hampered somewhat, but we can run a final check by using the film phonographs and the synchronous projector as an interlock system. When the final master recording is made, we run the work-print picture which bears cue marks for the benefit of the recordist.

We are using Bell & Howell hot splicers and Jefrona film cement. We have begun checker-boarding, and plan to use the technique more.

Our film laboratory was started in 1947 with the purchase of an Engineering Development Laboratories Model DM-7 processing machine and a Bell & Howell Model J printer. We processed negative, reversal, and print until 1952, when we stopped processing reversal. We were dissatisfied with our duplicates of reversal originals, and found in addition that the changeover from negative to reversal was too time consuming.

We are unusually fortunate in one important respect. All our chemical solutions are mixed for us by the University College of Pharmacy's drug manufacturing service.

At the present time we are processing Eastman Background X, Tri-X, 7374 kinescope recording negative, 7203 duplicating negative, and du Pont 828A fine grain master positive stocks in our "negative" machine, which we have modified to run at 28 feet per minute (instead of 18). We use as a developer D76 at 68°, giving Background X and Tri X from 6 to 9 minutes, and kinescope recording negatives from 4 to 7 minutes. For control we use a step tablet on control stock, made on an Eastman Processing Control Sensitometer. The tablets are read on a Macbeth-Ansco Color Densitometer. We use grommet splices in the negative machine.

One of our two Bell & Howell Model J printers is equipped with a Par fader. We make all our release prints on Eastman 7302 stock. We have found experimentally that we can make acceptable quick dissolves from A and B negative rolls. We have not yet begun color printing. Step tablets are placed at the beginning or end of each print to give us a check on gamma. Since the printers have only one head each, sound release prints are rewound for the second passage through the printer.

Timing is done by inspection of the negative. We now have a Cinex machine which we hope to have in operation soon for making duplicate negatives, and eventually for all work. We make duplicate negatives for all productions from which we expect a considerable volume of release printing. We believe that our present duplicate negatives give prints of adequate quality for most educational purposes.

We began operating our EDL Model DM-2 processing machine in 1954. Although it will run at 90 feet per minute, our usual speed is about 50. We use D16 developer, and process release prints, picture and sound workprints, original sound tracks, and direct positive single system kinescope recordings in this machine. The machine is unmodified except for the addition of recirculation tanks.

Because of the volume and variety of laboratory work, we have evolved the use of a system of work orders bearing serial numbers. Every piece of film is accompanied by a copy of the work order at every stage of its passage through the laboratory. Footages are measured on the printer, and the amount of footage is carefully posted

against work order numbers for billing. Departments which regularly use the services of the laboratory are billed monthly for work charged to their account numbers. The billings are handled through regular Bureau of Audio-Visual Instruction channels.

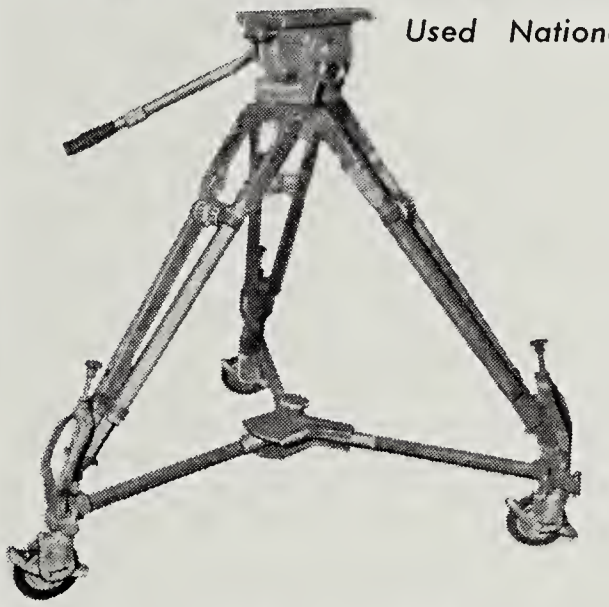
We are shooting more and more multicam footage. We can run 200 feet at a time, using a clapstick at the beginning of each roll. The big problem as yet is in editing. A Moviola with three picture heads would be ideal, but at present we must run each camera picture workprint with the track, then after seeing all three pictures, decide which camera footage is to be used at any given point.

For nine weeks each fall our time Friday noon to Monday night is given over entirely to producing football films. We shoot two versions (one wide-screen) of each game, about 1400 feet each. By working through the night Saturday we have silent prints ready for delivery to coaches and television stations by noon Sunday. On Monday morning an announcer ad libs a commentary for the television releases which require sound, and these prints are on on their way to the stations on Tuesday. From Tuesday to Friday we try to get some of our other work done, but actually for a period of several weeks we all carry on in a kind of stupor to which we refer as "football daze." The final effort comes in the tenth week when we all pitch in to get out a "football highlights" film for the season. Thereafter we have a short period in which we screw up our courage to face the basketball season.

Currently we are producing a series of color films on dental techniques. Also in the mill is a series on teaching methods in the elementary schools. We are preparing two films on spoken and written French for elementary grades. In script is a project for the Iowa Commission for the Blind. The College of Medicine is sponsoring a film dealing with high speed studies of a synthetic ear. For the College of Dentistry, we are completing a film on mandibular anatomy.

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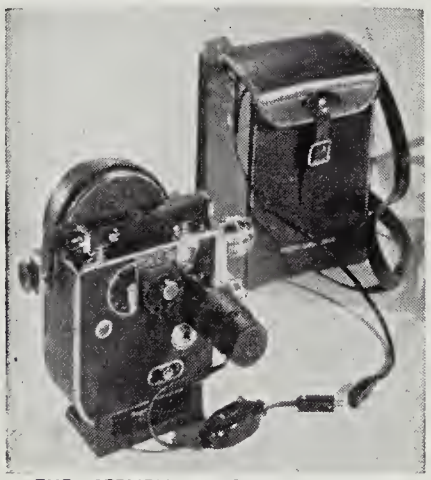
HERE'S THE AMAZING DEAL:

2 — Holmes Ball Bearing 35 mm. Portable Sound Projectors, constant speed motors, 1000 watt Mazda lamphouses, 2000' upper and lower magazines, photocells, exciter lamps, etc. (Brand New). 2—Series 1 4" lenses, with adapters (New). 1—Set projector, photocell and exciter lamp cables (New). 1—Amplifier, late model, 25/30 watt output (Rebuilt like New). 1—Jensen Heavy Duty 12" PM speaker, with baffle and 75 feet cable (Reconed and refinished), guaranteed same as new).

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A SIMILAR STEVENS CAMERA DRIVE IS NOW AVAILABLE FOR CINE SPECIAL CAMERAS.

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FOR IMPACT IN SOUND



KINEVOX

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vision Center. The Center operates as a joint facility for teaching and production of television programs, with the teaching budget coming through Speech and the production budget coming through the University administration.

The film production courses are taught by Dr. John Mercer, who is also film supervisor of the Television Center. John Kuiper, graduate assistant, came to us from Reela Films by way of NBC. He spent last summer in Africa shooting sound photography for *Zoo Paarde.*

There are two three-hour courses with additional workshop credit. Both courses deal with fundamentals. No particular type of film is stressed, but the precautions needed for television film are emphasized.

In the first semester lectures cover 21 different phases of film production, production equipment and procedures, and take up two hours each week. In addition, there is a two-hour laboratory session involving a series of 9 exercises.

We work in crews of four, rotating the jobs of director, cameraman, and two performers. We have a maximum of twelve in each laboratory. We shoot Background X, Tri-X, and some Type A Kodachrome. Our laboratories come on Wednesday and Thursday, and the film is processed and printed by the Unit laboratory for showing on Monday or Tuesday.

We use a short editing exercise on film to teach matching action. The exercise is printed in quantity at the Motion Picture Unit laboratory by using a loop tree, and each student is given a print. The exercise is a sequence of eight overlapped shots of one performer.

For first semester term projects the crews are regrouped into crews of six. Each crew selects its own cameraman, director and performers, and plans a short melodrama of about 25 shots. They spend two hours in planning and four hours in shooting—a total of three laboratory periods in all. Emphasis is on continuity, with properties and sets minimized. A police badge, rubber knife, several toy pistols, and some play money are basic essentials.

First semester cinematography is usually a required subject for television majors and journalism majors going into television news. The course is also open to any seniors in the university and registration usually includes students from a number of other departments.

In the second semester, we study film planning, script writing, directing, acting, sound recording, and editing. Each student writes a treatment outline and script, and shoots, edits, and presents to the class a five-minute film as his semester project. The student reads his commentary over a P. A. System. The subject-matter of these films is very broad, ranging from how to string a tennis racket to dance interpretations of poetry. Our theory is that the students should know pictorial continuity (first semester) before they attempt to write a script. The film project takes them through the complete cycle of producing a short film, except for sound recording, and gives them an opportunity to show what they can do continuity-wise. **END**

WHAT'S NEW

(Continued from Page 582)

rotates a full 360°, and travels N.S.E. or W.

Editing Equipment Catalog

Hollywood Film Company, 956 Seward St., Hollywood, announces the availability of a new catalog of 16mm and 35mm precision editing equipment and reels, cans and shipping cases. Catalogs can be secured by requesting them on your business letterhead.

New DuPont Film

"Superior" 4 Panchromatic motion picture negative film, type 928, rated at 320 daylight and 250 tungsten (ASA), has been announced by the Du Pont Photo Products Dept., Wilmington, Del.

The new negative stock, available in both 16mm and 35mm widths, has a fine-grain, wide latitude emulsion which permits high quality results under a wide variety of outdoor or indoor lighting conditions, particularly in "existing light" situations.

The speed and latitude of the film are such that it is highly recommended for instrument data recording where ordinary panel illumination is adequate for exposure.

The new film will be available from all Du Pont regional offices beginning October 1st.

New Cine Camera

Bell & Howell Co., Chicago, announces a new 16mm cine camera featuring the Sunomatic lens, which is set by dialing a printed description of the outdoor light. Lens provides over 50% more picture area and greater depth of field than the standard 1" lenses.

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STUDIO & PRODN. EQUIP.

SPECIALS TO START OUR 31ST YEAR

3 MAURER CAMERAS w/235° shutter; Mitchell type viewfinder; 400′ magazine, syncmotor; less lens. Excellent $1995.00

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NICE SURPLUS EYEMO 35mm CAMERAS—SENSATIONALLY LOW PRICED with 2″ lens from $124.50; some less lens..... 99.50

SPIDER TURRET EYEMOS, less lens, from..... 395.00

B&H 200′ 35mm MAGAZINES (can be converted to 16mm)..... 29.50

NEW TRIPOD TRIANGLES, prevent slipping, $30 value 16.95

CINE SPECIAL II w/1″ fl.9 Ektar, few months old, like new..... 695.00

CINE SPECIAL BLIMP w/Ceco Syncmotor, Mitchell type viewfinder, followfacus, W/A adapter. Reconditioned, $700 value..... 444.00

SURPLUS CAMERA SLATES, good condition..... 1.95

HOUSTON K-3 PROCESSORS, 16mm neg/pos/reversal. Include refrigeration; temperature controls; recirculation; airpump; stainless steel construction. Look new..... 2595.00

HOUSTON K-3 PROCESSORS, used, excellent.... 2175.00

NEW HOUSTON 16mm PROCESSOR rollers, 3⅝″ dia. $1.00 value..... .49

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NEW MOVIOLAS, 16mm or 35mm PICTURE ONLY 495.00

16mm PREVIEW MOVIOLAS ULPVCS, large 11″x14″ picture, composite sound and separate soundhead. Rebuilt like new..... 1895.00

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CLOSE OUT SALE—NEUMADE STORAGE RACKS & CABINETS — SLIGHTLY USED & NEW. MM-102 CABINETS—hold 100-400′ 16mm. reels, 72″ high x 28½″ wide x 11″ deep. Regularly $195.00. Used 99.50

mm-184 CABINETS—hold 250-400′, 16mm reels, 72″ high x 48″ wide x 11″ deep. Regularly $330.00. Used 149.50

BRAND NEW RK-102 RACKS—hold 102-1000′ 35mm reels (over 200 16mm) 78″ high x 41″ wide x 12″ deep. Regularly $165 87.50

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ARRIFLEX Ballhead Tripod, like new..... 129.50

BRIDGAMATIC JR. 16mm neg/pos. Developer. Includes airpump, drain pump, stapler. $1500.00 value. Good shape..... 975.00

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NEW SOS ANTI-STATIC BRUSHES, Lipstick size $1.70—Small 1¼″ size $4.25; 3″ - $10.60; 6″ - $22.60; 9″ 33.55

HOLMES 16mm ARC PROJECTOR, w/rectifier, 55 watt amplifier, pedestal, 2 speakers, good condition 495.00

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602 W. 52nd Street, New York 19

Western Branch—6331 Holly'd Blvd., Holly'd, Calif.
Phone HO 7-9202

BASS . . .is headquarters for Arriflex 16; the new Zoomar 16; Cine Specials all models; Bell & Howell 70-DR, Bolex H-16; Used 16mm. Eastman Sound Kodascope Model FB-40, 750 watt, 1600 ft. film cap., twa 12″ speakers, $250.00; Used 16mm. B.&H. Utility 138X, 750 watt, 2″ F:1 65 lens, 12″ speaker, complete in 2 cases, $165.00; Used 16mm. Ampro. Compact sound proj., sound and silent speeds, 2″ F:1.85 lens, 1600 ft. film; Used 16mm. Ampro Premier 10 sound prop., sound and silent speeds, F:2.16 proj. lens, 750 watt, 2000 ft. film cap., 12″ speaker, complete in two cases, $250.00. Best buys . . . Best trades always. BASS CAMERA CO., Dept. A.C., 179 W. Madison St., Chicago 2, Ill.

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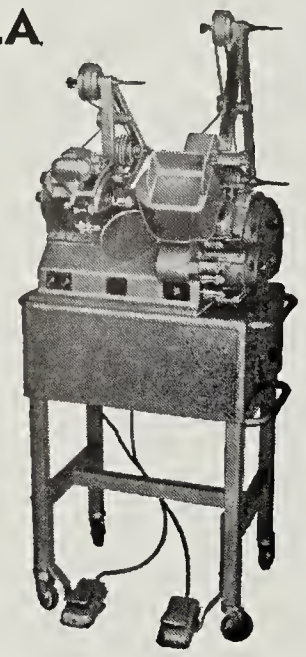
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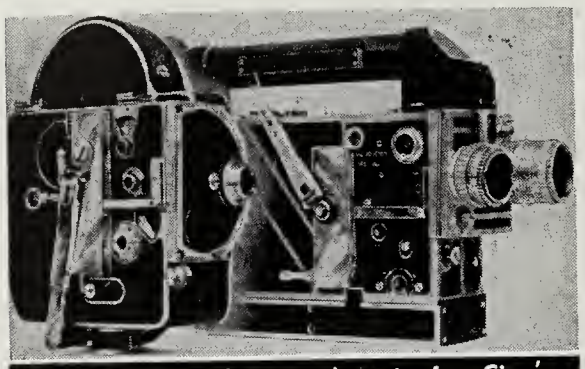
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(Continued from Preceding Page)

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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 594)

● RAY BINGER, Kellogg's commercials.* Jack Daniels, director.

WARNER BROS.

● STANLEY CORTEZ, ASC, "Melville Goodwin, U.S.A." with Susan Hayward and Kirk Douglas. H. C. Potter, director.

● TED MCCORD, ASC, "Conflict,"* with Charles Ruggles. Roy del Ruth, director.

● JACK CARDIFF, "The Sleeping Prince," (LOP Production shooting in London) with Marilyn Monroe and Laurence Olivier. Laurence Olivier, producer-director.

● HARRY STRADLING, ASC, & GAYNE RESCHER, ASC, "A Face In The Crowd," (Newton Prod. shooting in Arkansas) with Andy Griffith and Patricia Neal. Eliz Kazan, producer-director.

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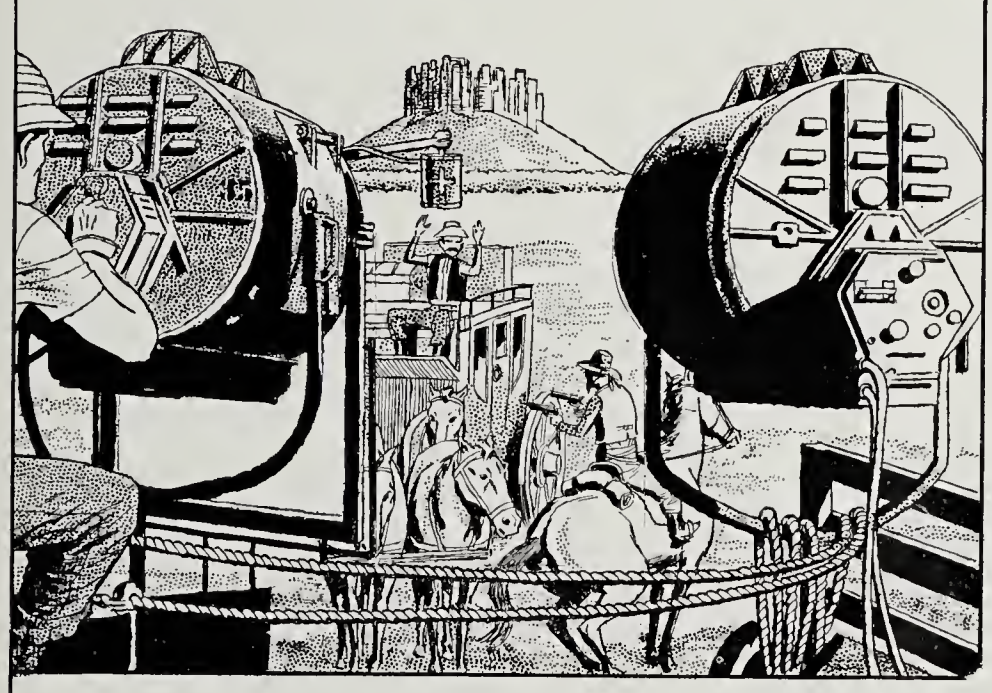
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AMERICAN

NOVEMBER • 1956

Cinematographer

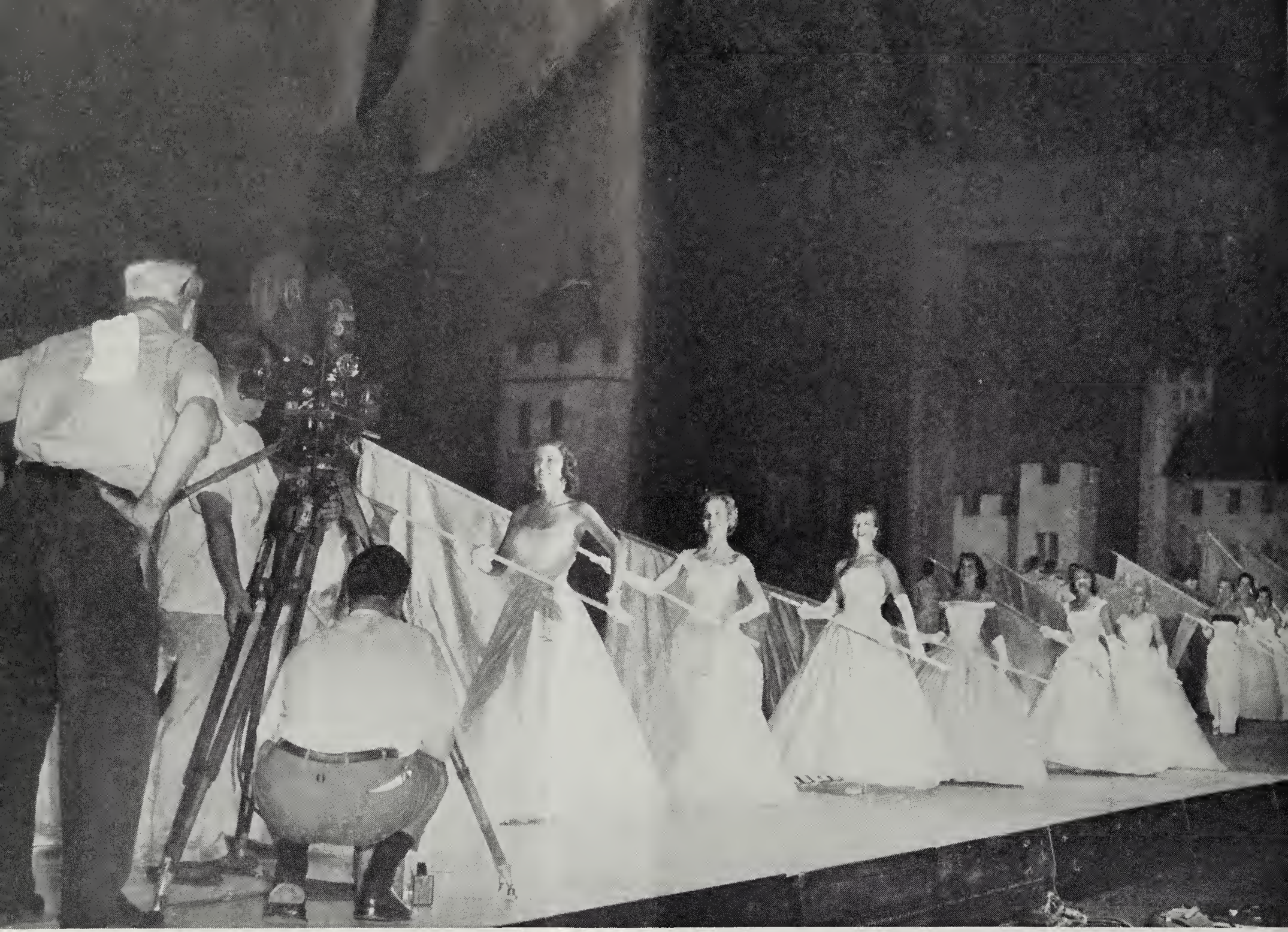
THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



In This Issue . . .

- Photographing "The Ten Commandments"
- Simple Animation Techniques
- Naturama—New Wide-Screen System

35c
FOREIGN 45c



Winik camera crew films Parade of States.

New, High-Speed Du Pont "Superior" 4 Captures Miss America Pageant for TV

ATLANTIC CITY, N. J. — Filming the 1956 Miss America Pageant in the resort's huge convention hall was a tough assignment for Winik Film Corporation, New York City, since only available light was used. But cameraman Fred Fordham chose Du Pont's new high-speed "Superior" 4 Motion Picture Film and turned out top-quality pictures . . . with an illumination of about 40 foot-candles!

Thousands of TV viewers saw the filmed portion of the show on the ABC-TV Network, sponsored by Philco Corporation. The pictures were clear and sharp with a full scale of middle tones (see table below for recommended exposures).

High-speed "Superior" 4 has an exposure index of 320, Daylight; 250, Tungsten, with a combination of medium-fine grain and extreme latitude. It's available in 35-mm and 16-mm sizes and is especially designed for theatrical and television work.

NEW Du Pont "Superior" 4, Type 928, Motion Picture Film is available now! Take advantage of its speed, latitude, fine grain and full panchromatic reproduction in your own motion-picture work.

FOR MORE INFORMATION, contact your nearest Du Pont Sales Office (listed below) or the Du Pont Company, Photo Products Department, Wilmington 98, Delaware. In Canada: Du Pont Company of Canada Limited, Toronto.

SALES OFFICES

Atlanta 8, Ga. 805 Peachtree Building
Boston 10, Mass. 140 Federal Street
Chicago 30, Ill. 4560 Touhy Ave., Lincolnwood
Cleveland 16, Ohio.....20950 Center Ridge Road
Dallas 7, Texas.....1628 Oak Lawn Avenue
Los Angeles 38, Calif. 7051 Santa Monica Blvd.
New York 11, N. Y. 248 West 18th Street
Wynnewood, Pa. 308 East Lancaster Avenue
Export.....Nemours Bldg., Wilmington 98, Delaware

ILLUMINATION: For incident incondescent light: 24 frames per second — 1/50 second.	*LENS APERTURE*	f:1.4	f:2.0	f:2.8	f:4.0	f:5.6	f:8.0
	FOOT-CANDLES REQUIRED	10	20	40	80	160	320

DU PONT
REG U. S. PAT. OFF

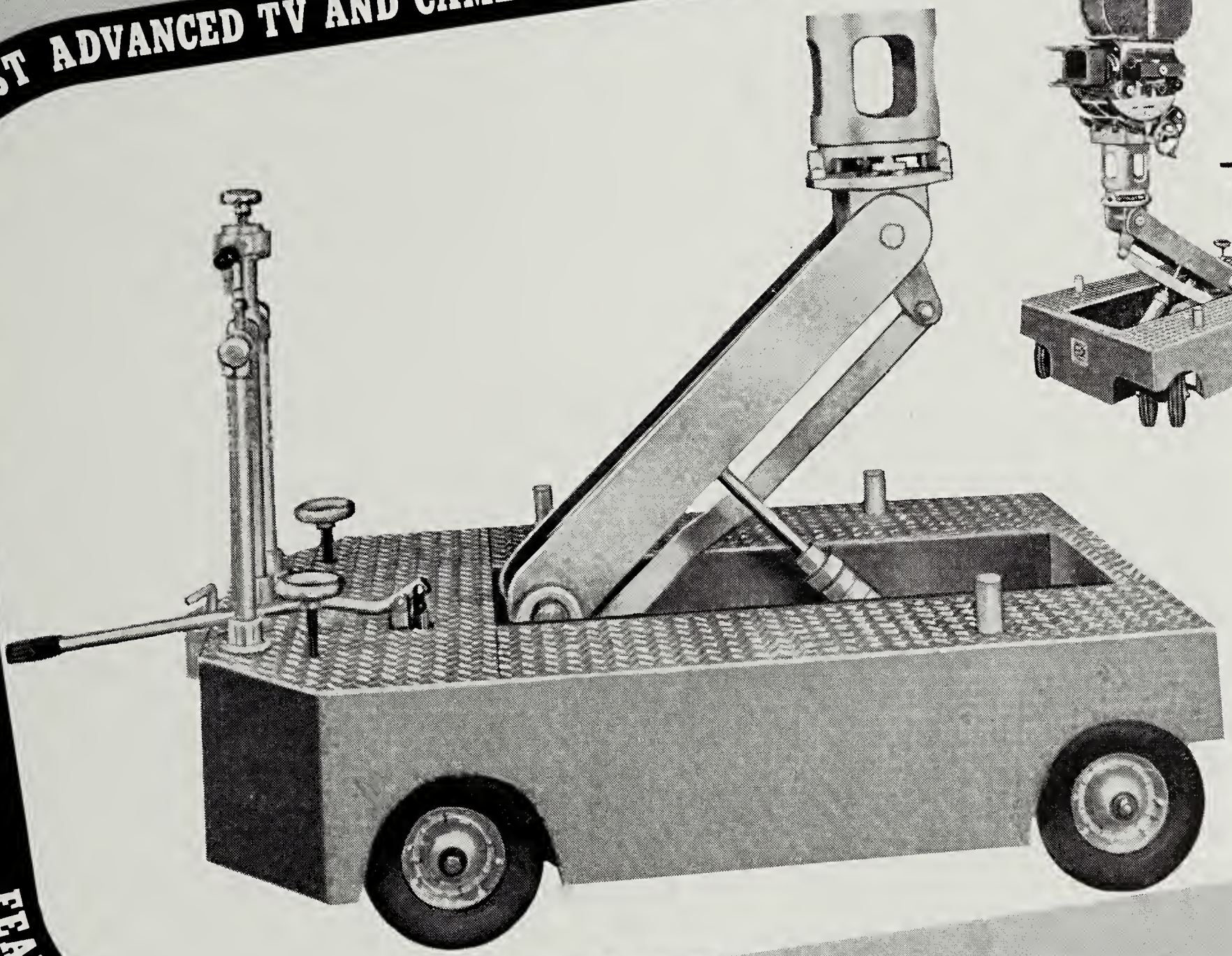
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

DU PONT MOTION PICTURE FILM

The Latest and Most Versatile

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MOST ADVANCED TV AND CAMERA DOLLY



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- Completely maneuverable to all angles with instant ease; many exclusive advantages found in no other dolly.
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- Easy rolling dual wheels of highest quality — choice of pneumatic or live rubber. Rigid floor locks.
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- A hi-hat for added height when required.
- Streamlined and sturdily constructed of welded steel and aluminum for stability, ruggedness and perfect balance.
- FOR COMPLETE DETAILS WRITE FOR BROCHURE.

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AMERICAN

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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VOL. 37 NOVEMBER • 1956 NO. 11

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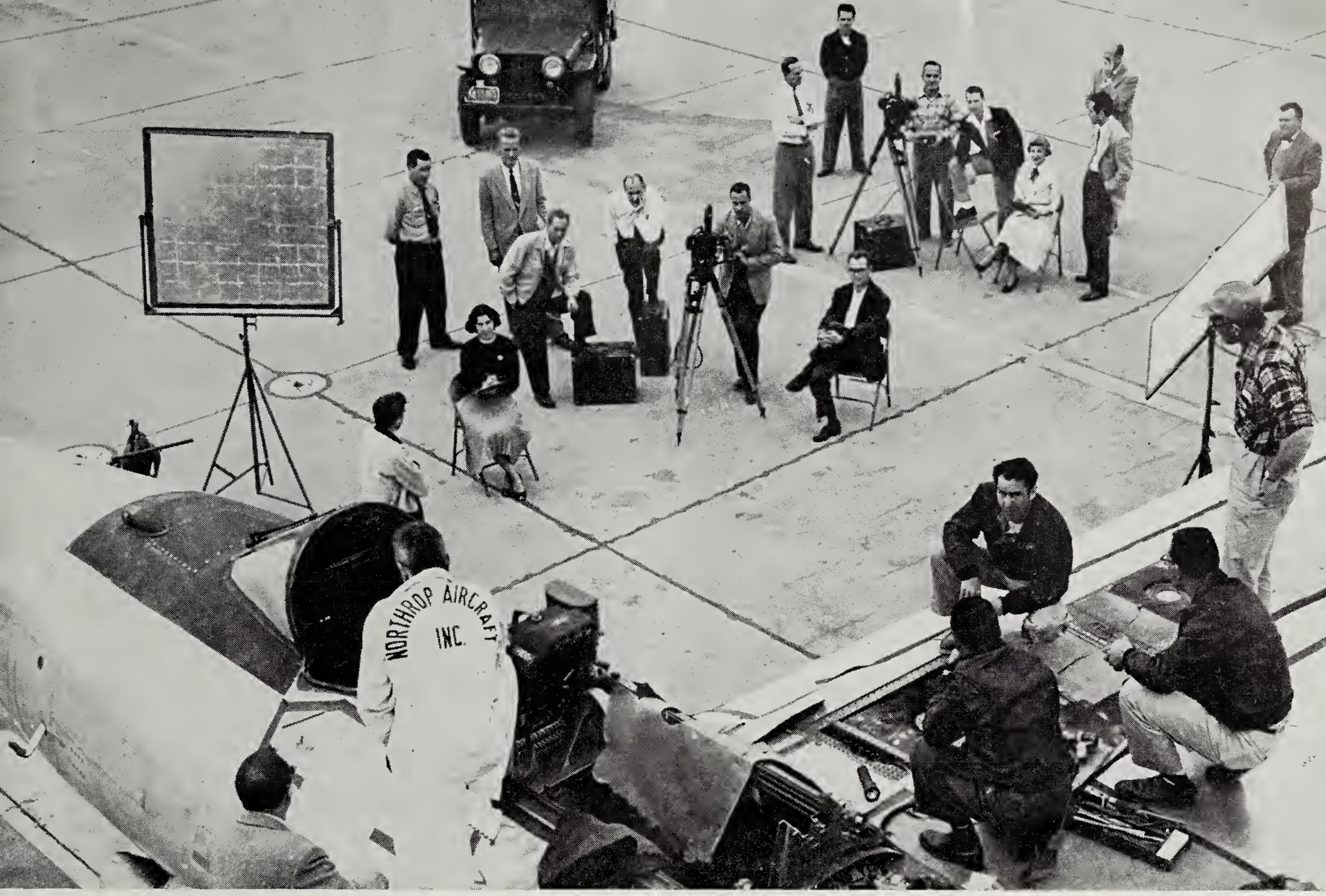
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ON THE COVER

CUBAN LOCATION—With the CinemaScope camera set up amidship, Director of Photography Lee Garmes, A.S.C., checks the camera lens before shooting a closeup of Victor Mature (2nd from right) for Samuel Goldwyn, Jr.'s "The Sharkfighters." Location is colorful Isla de Pinos, Cuba.

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Manufacturer's Twenty Member Motion Picture Unit sets up to shoot Northrop F-89D oll-weather jet interceptor for sequences in Northrop Training Department film.

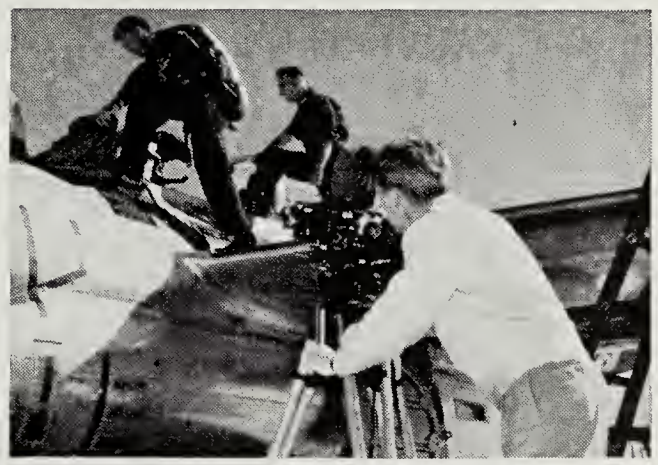
INDUSTRY'S USE OF 16MM CAMERAS BROADENS

Northrop Aircraft Demonstrates Expanded Industrial Use of Mitchell Cameras

Over 100,000 feet of film were shot last year by two 16mm Mitchell cameras operated by a full-scale motion picture unit at Northrop Aircraft. Operating daily throughout the year, these 16mm cameras provide impressive evidence of the rising role of professional motion picture equipment in American Industry today.

Northrop, a leader in airframe and missile manufacture, makes diversified use of their Mitchell cameras. Motion pictures range from employee activities to engineering test films—where re-shooting is impossible and where steady, accurately-framed film of superior quality is consistently delivered by Mitchell cameras.

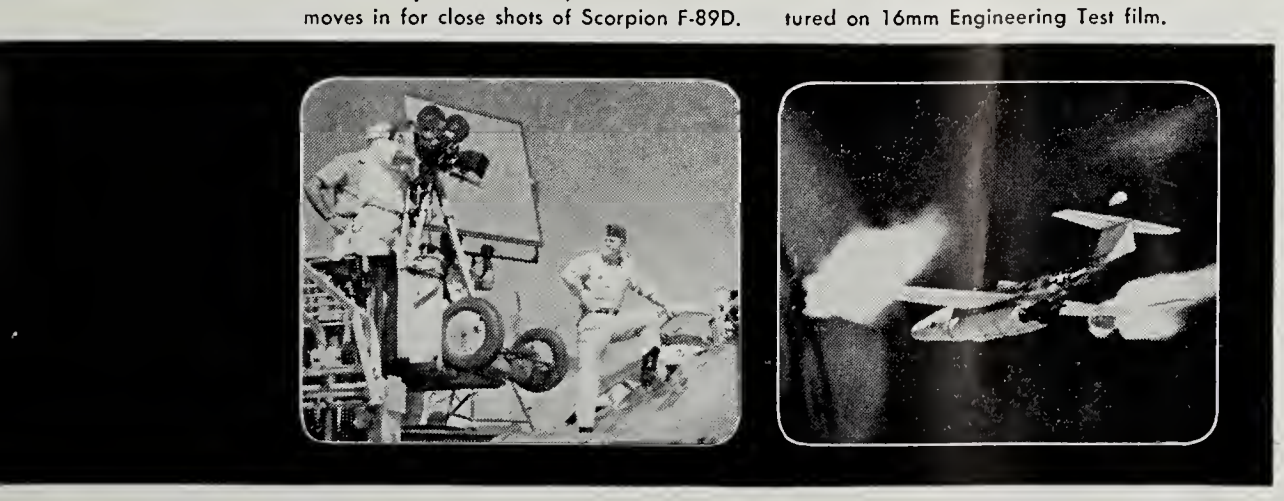
No other single camera is today used by American Industry for such a broad range of filming requirements as is the Mitchell camera. Easy operating Mitchell cameras help create sales, meet delivery schedules, and systematize and accelerate research and development. For details about Mitchell equipment that will meet your specific needs, write today on your letterhead.



Alaska Bound test pilot Bob Love and Columnist Marvin Miles being filmed by Mitchell camera for Northrop Public Relations Department.

For Quality Control Film, Mitchell camera moves in for close shots of Scorpion F-89D.

104 Rocket Salvo of twin-jet F-89D is captured on 16mm Engineering Test film.



Mitchell Camera
CORPORATION
666 WEST HARVARD STREET
GLENDALE 4, CALIFORNIA
Cable Address: "MITCAMCO"

***85% of professional motion pictures shown in theatres throughout the world are filmed with a Mitchell**

Announcing

THE NEW BELL & HOWELL ADDITIVE COLOR PRINTER!

This totally new color printer offers seven advanced features . . . sets new standards for technical precision and operating convenience.

The Bell & Howell Additive Color Printer is the result of intensive research and close collaboration with film laboratory specialists throughout the world. In addition to the features shown here, it incorporates the latest innovations of Bell & Howell's Continuous Film Printers which today print nearly all of the world's commercial film.

1. Controlled Color Density—Available light is separated into the three primary colors: red, green and blue. A system of dichroics is used to produce only pure, narrow color beams. Color intensity is controlled by adjustable vanes which act as light modulators, permitting more or less of each color to pass. The three modified color beams are recombined at the aperture to produce the density and color required for correct printing.

2. Increased Illumination—Equipped with 1,000 watt, high-intensity, prealigned printing lamp. An electrical interlock prevents the lamp from burning unless blower is in operation. Illumination can be reduced for black and white printing.

3. Variable Speeds—60, 90 and 120 feet per minute.

4. Integral Fader—Built into the lamphouse. Adjustable to produce the desired fade length. Fade lengths of 20, 36 and 48 frames are available on 16mm printers, and 16, 32 and 48 frames on 35mm printers. Fade adjustments may be changed during the printing run to produce any of the three lengths.

5. Visual Circuit Inspection—Five pilot lights (with dousers) are mounted on each of the three color banks to permit visual inspection of the electrical circuitry for ease of maintenance. Electronic components are replaced as units, virtually eliminating lost production due to maintenance down time.

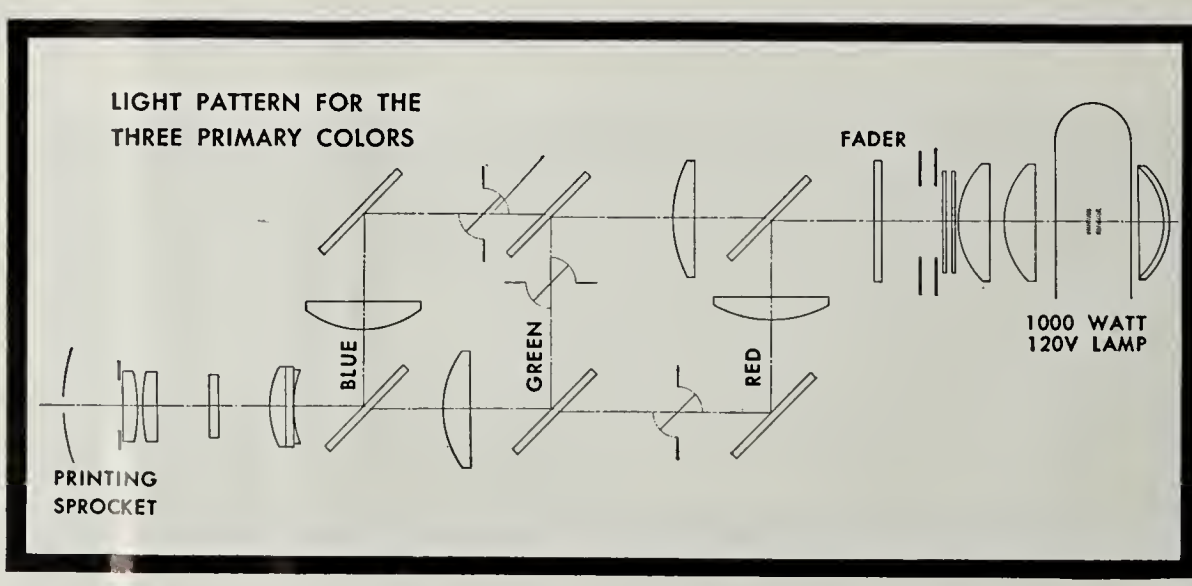
6. Automatic Operation—Color and illumination cue controls are actuated by a perforated control tape which is pre-punched on the program perforator. The tape passes through a reader built into the console base of the printer and controls all necessary printing functions with the exception of the fade.

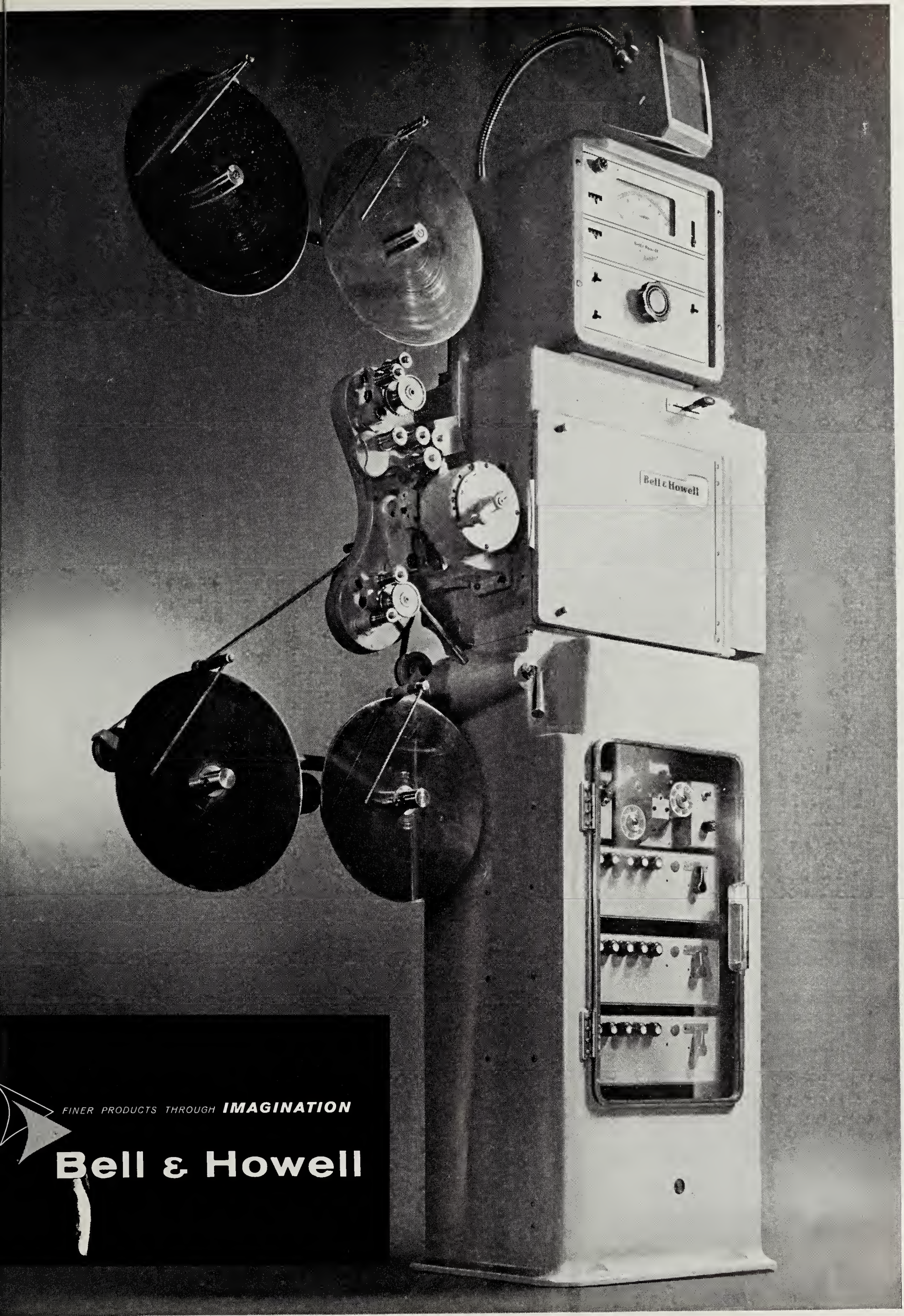
7. Easily Accessible Controls—Mounted on a panel above the printer lamphouse. The *film footage counter* registers up to 10,000 feet of film and can be reset at the start of each film run. The *automatic fader counter* permits the operator to keep count of fades if they are to be varied in length during printing. Both counters are illuminated for easy viewing.

AVAILABLE ACCESSORIES

- **Program perforator for producing control tape**
- **1000 watt rectifier for DC**
- **Margin printing kit for light printing edge numbers (16mm)**
- **Sensitized patch cueing kit to eliminate notching**

For further information, write Bell & Howell, Professional Equipment Division, 7148 McCormick Road, Chicago 45, Illinois.





FINER PRODUCTS THROUGH **IMAGINATION**

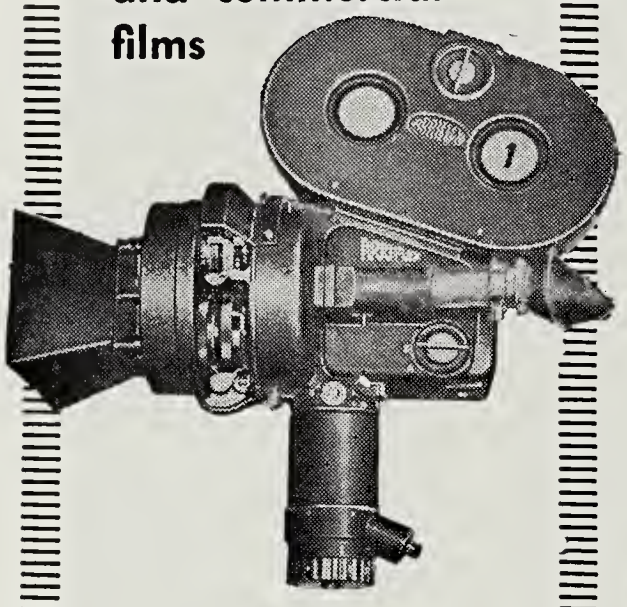
Bell & Howell

ARRIFLEX

New 35 mm Model 2A
With 180° Shutter

A TRULY GREAT CAMERA

for TV, Newsreel and commercial films



For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

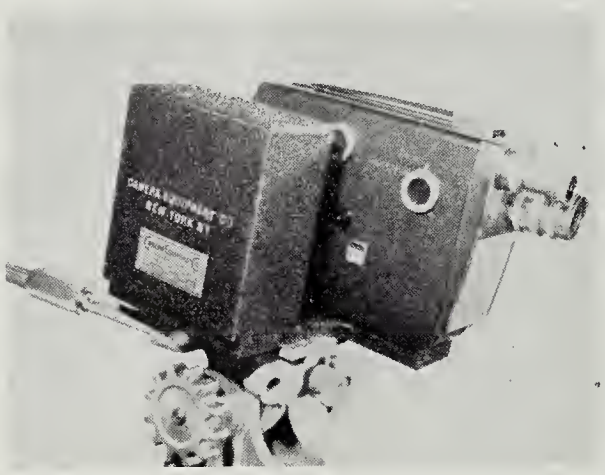
Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200' or 400' magazine. Write for free folder.

Blimp now available.
16mm ARRIFLEX also available.

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CAMERA EQUIPMENT CO., INC.
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WHAT'S NEW

. . . in equipment, accessories, service

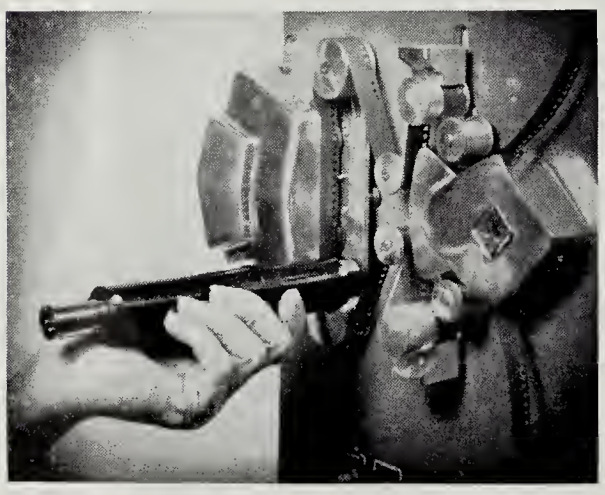


Sync-motor for K-100

Camera Equipment Co., 315 West 43rd St., New York, N. Y., announces a new 110-volt AC synchronous motor for the Cine Kodak K-100 16mm camera, which drives the camera at 24 f.p.s. Motor is readily attached or detached without tools.

Wide Angle Attachment

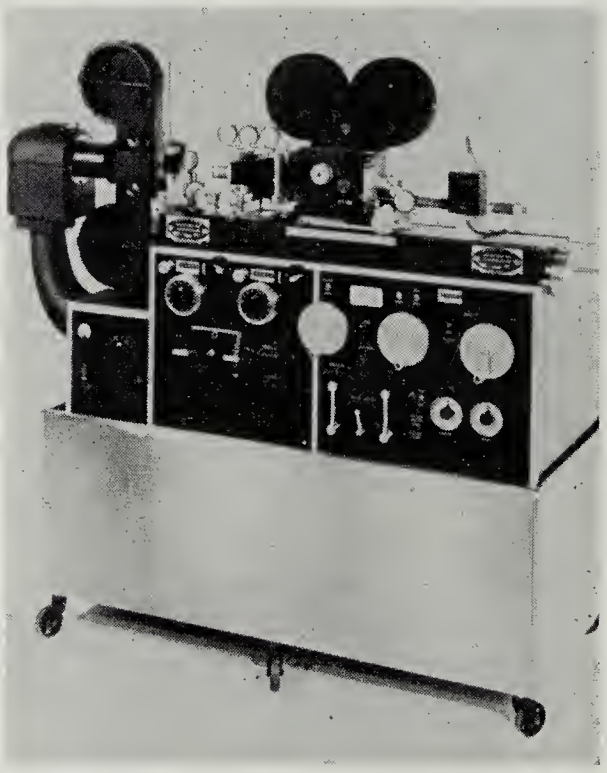
Bell & Howell Company, Chicago, Ill., announces a new wide angle attachment lens for its recently announced 16mm electric eye cine camera. Attachment converts the camera's 20mm lens to a wide angle lens with a focal length of 13.2mm. without affecting ability of the lens to set itself automatically for proper exposure. List price is $59.95.



Recorder Checker

Stancil-Hoffman Corp., 921 No. Highland, Hollywood 38, Calif., offers an ingenious tool for the maintenance of fixed and portable magnetic recording equipment. Known as an Oscillator Wand (Model AO11), gadget will thoroughly check a channel in a matter of seconds.

Wand is a source of either a 100-cycle tone or an 8000 cycle tone. When it is held close to the playback head of a recorder, a similar tone will be introduced into the playback head to check operation of the amplifier. Held close to a dynamic microphone, wand will induce similar tones. List prices start at $43.50.



Effects Printer

J. G. Saltzman, Inc., 480 Lexington Ave., New York 17, N. Y., announces a new special effects optical printer which features automatic focus from ¼ to four times continuous. The versatile printer takes both 16mm and 35mm films. It is easily changed from 16mm to 35mm or from 35mm to 16mm, with electrical dissolve on 35mm.

Maximum speed of operation is 320 frames per minute. Other features include hardened precision film tracks, shock mounts, electric clutch, automatic skip-frame, and electronic speed changer and totalizer. All vital controls are located at the front.

Complete technical data and prices may be had by writing the company.

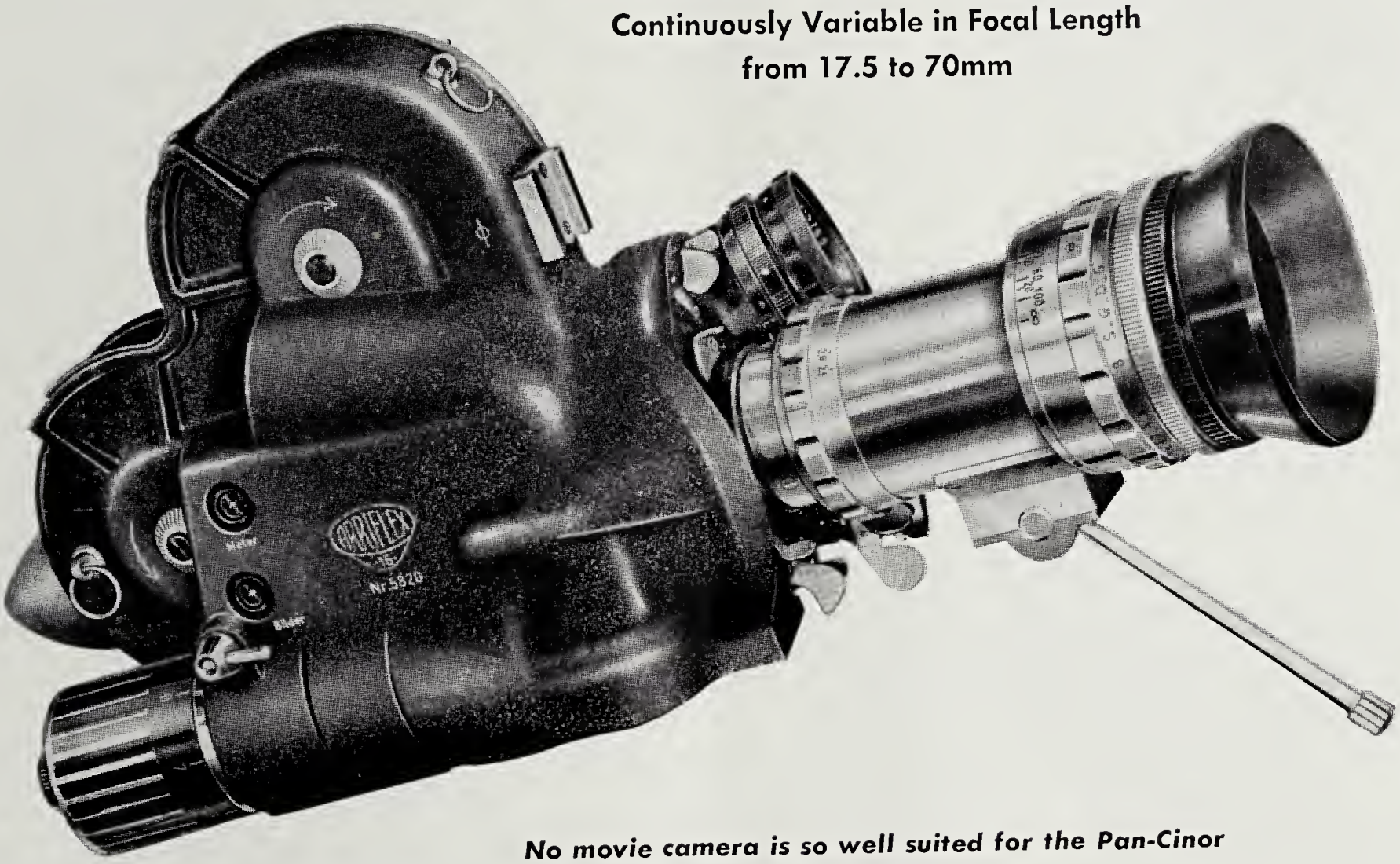
CECO Distributes Maurers

Camera Equip. Co., 315 West 43rd St., New York, N. Y., has been appointed exclusive distributor in the U. S. for all Maurer cameras and recording equipment. Company also will offer complete repair and servicing facilities for Maurer equipment. **END**

NEW ARRI PAN-CINOR 'ZOOM' LENS

for the ARRIFLEX 16®

Continuously Variable in Focal Length
from 17.5 to 70mm



***No movie camera is so well suited for the Pan-Cinor Varifocal Lens as the* ARRIFLEX 16.**

By simply moving a lever, you can vary the focal length of this lens from wide angle to telephoto — and back — smoothly. You observe the results while actually shooting, as you view the image through the Arri Pan-Cinor lens in the Mirror Reflex viewing system of the Arriflex. No external finder is needed.

Other lenses need not be removed, because the divergent lens turret of the Arriflex 16 permits two other lenses to be used without optical or physical interference.

It is easy to follow moving subjects and it saves expensive "dolly" shots as the camera can remain in one position and a dolly effect obtained by varying the focal length of the lens.

SPECIFICATIONS

Varifocal Range	17.5mm to 70mm
Aperture Range	f:2.4 to f:22
Focusing Range	6½ feet to Infinity

Built-in Lens Hood/Filter Holder for Series VIII Accessories

$399.75

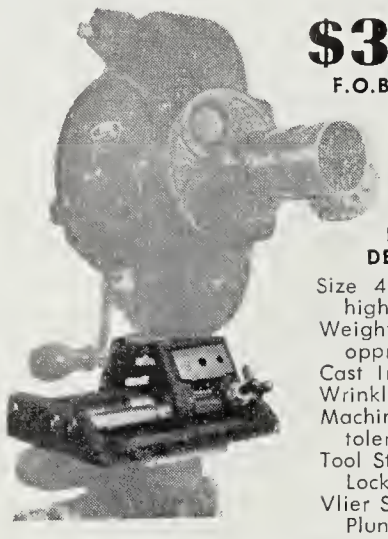
Note: The Arri Pan-Cinor is not interchangeable with the standard model, nor can the standard model be converted for use with the Arriflex.

KLING PHOTO CORP.

257 Fourth Avenue, New York 10, N.Y.
7303 Melrose Avenue, Hollywood 46, Cal.

PRECISION RACK-OVER

For all Bell & Howell 70 Cameras & Bolex "H" Cameras



PRICE
$32.50
F.O.B. WESTLAKE

PHYSICAL DESCRIPTION

Size 4¼"x4¾"x2¼" high
Weight: 3½ lbs. approx.
Cast Iron
Wrinkle Enamel finish
Machined to .001 tolerance
Tool Steel Guide and Lock Pins
Vlier Spring Locating Plunger

FEATURES

- Film **exactly** what you see.
- A must for perfectly centered titles.
- Perfect for **animation.** Assures you all moving objects are within the lens field.
- Film **ultra close-ups** not possible with camera parallax adjustment.
- Mounts on any tripod using ¼-20 mounting screw.
- **Cam locks** in position to avoid accidental loss of field.
- Camera can be **hand cranked** regardless of position on **RACK-OVER.**
- A substantial **camera base** used to film from a table top.
- May be used with all camera accessories in place, such as: motor, 400-ft. magazine, etc.
- Can be racked over and locked **instantly.**

NOTE: Titler Accessory to mount on **RACK-OVER** available. $32.50.

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P.O. Box 135 Westlake, Ohio

FOR GEATER PROFITS IN YOUR FILM PRODUCTIONS

Use CINEKAD Motion Picture and TV Studio Equipment

Some of the many new CINEKAD products are:

- Mike Booms—5 different models
- Dollies—7 different models
- Tripod Triangle with clamps
- Tripod Triangle with wheels
- Swivel Ball Joint for Pro-Jr., S.O.S., and F-B Tripods
- Sync Motor Drive for 16/35mm Projectors
- Sync Motor Drive for 16/35mm Cameras
- Blimp, Hi-Hat and Lens Extension Tubes for the Arriflex Camera
- Telephoto Lens Cradle for Arriflex 16, Cine-Special and Bolex Cameras
- Blimp for the 16/35mm Mitchell cameras, made of unbreakable Formica, weight only 16 lbs.
- Hydraulic Gyro Tripod Head, heavy duty, speed controls, fits all Mitchell, Camera Equipment and Houston Fearless tripod legs
- Shoulder Brace for all 16/35mm cameras
- Roof-top tripod clamp
- TV Metal Tripod with hand operated hydraulic elevator
- Stands for lighting equipment—3 Models. They are collapsible, lightweight, portable and sturdily built.

Write for New Illustrated Catalog and Price List

LLOYD'S CAMERA EXCHANGE
Motion Picture and TV Equipment Sales, Rentals, and Service.
1614 No. Cahuenga • Hollywood 28, Calif.

Photographic Assignments

OCTOBER • 1956

Who, where and what the industry's cameramen were shooting last month.

*Asterisks indicate television film productions.

ALLIED ARTISTS

• William Mellor, ASC, "Love in the Afternoon," (shooting in Paris) with Gary Cooper, Audrey Hepburn and Maurice Chevalier. Billy Wilder, producer-director.

AMERICAN NATIONAL

• Floyd Crosby, ASC, "Gun for a Town," (Jerold Zukor Prods. for Allied Artists) with Dale Robertson and Brian Keith. Max Glandbard, director.

• Bob Hoffman, "Dr. Christian,"* (Ziv-TV) with MacDonald Carey. James Sheldon, director; "Highway Patrol,"* (Ziv-TV) with Broderick Crawford. Gilbert Kay, director.

• Curt Fetters, "Science Fiction Theatre,"* (Ziv-TV) Eddie Davis, director; "Dr. Christian,"* (Ziv-TV) with MacDonald Carey. Paul Gilfole, director; "Highway Patrol,"* (Ziv-TV) with Broderick Crawford. Eddie Davis, director.

• Monroe Askins, "Harbor Patrol,"* (Pilot) Herb Strock, director; "Underwater,"* (Pilot) Andrew Martin, director; "Men of Annapolis,"* (Ziv-TV) William Castle, director.

• Harold Wellman, ASC, "Adventures of Superman,"* (Superman Inc.) with George Reeves, Noel Neill, Jack Larson. Various directors.

BILTMORE STUDIOS (New York)

• J. Burgi Contner, ASC, "Cross Up," (Security Pictures for UA release) with George Montgomery and Geraldine Brooks. William Berke, producer-director.

BRADLEY STUDIOS (Nashville, Tenn.)

• Emil Harris, "Country Show,"* (Gannaway Prods.) with Carl Smith, Marty Robbins and Webb Pierce. Albert Gannaway, director.

CALIFORNIA STUDIOS

• Hal McAlpin, "O. Henry Playhouse,"* (Gross-Krasne, Inc.) with Thomas Mitchell. Peter Godfrey and Barney Girard, directors; "Dr. Hudson's Secret Journal,"* (Wesmor, Inc.) with John Howard. Peter Godfrey, director: "Crime Beneath the Sea," (Nacirema Prods.) with Mara Corday and Pat Conway. John Peyser, director.

• Lucien Andriot, ASC, "The Life of Riley,"* with William Bendix. Abby Berlin, director.

• Lester Shorr, ASC, "Adventures of Hiram Holliday,"* (Gross-Krasne) with Wally Cox. Philip Rapp, director: "Matinee Theatre,"* (Gross-Krasne Inc.). Albert McCleery, director.

• Fred Gately, ASC, "The Rosemary Clooney Show,"* (Maysville Corp.) with Rosemary Clooney. Dick Darley, director.

• Fleet Southcott, "Gunsmoke,"* (Filmaster Prods.) with James Arness and Dennis Weaver. Andrew McLaglen, director.

CARTHAY SOUND STAGE

• William Whitley, ASC, "The Lone Ranger,"* with Clayton Moore and J. Silverheels. Earl Bellamy, director.

COLUMBIA

• Gert Andersen, ASC, "Ford Theatre,"* (Screen Gems), various directors.

• Ted Moore, "Interpol," (Technicolor-Warwick Prods. shooting in Rome) with Victor Mature and Anita Ekberg. John Gilling, director.

• Bob Krasker, "The Story of Esther Costello," (Valiant Films, Ltd. shooting in London) with Joan Crawford and Rossano Brazzi. David Miller, director.

• Kit Carson, "Father Knows Best,"* (Screen Gems) with Robert Young and Jane Wyatt. Peter Tewksbury, director.

• Jack Hildyard, "The Bridge on the River Kwai," (Horizon-American Prods., shooting in Ceylon) with Jack Hawkins and Alec Guinness. David Lean, director.

• Ernest Haller, ASC, "The Cunning and the Haunted," (shooting in Georgia) with Sal Mineo and James Whitmore. Alfred Werker, director.

• Wilkie Cooper, "The Admirable Crichton," (London Films shooting in Bermuda) with Kenneth More and Diane Cilento. Lewis Gilbert, director.

• Benjamin Kline, ASC, "The Man Who Turned to Stone," with Victor Jory and Ann Doran. Leslie Kardos, director; "Circus Boy,"* (Screen Gems). Robert Walker, director.

• Gerald Gibbs, "Fortune is a Woman," (Launder-Gilliat Prod. shooting in London) with Jack Hawkins and Arlene Dahl. Sidney Gilliat, director.

• Basil Emmott, "Town on Trial" (Markman Films; shooting in London) with John Mills, Charles Coburn and Barbara Bates. John Guillerman, director.

• Joseph Biroc, ASC, "Garment Center," with Lee J. Cobb and Kerwin Mathews. Robert Aldrich, director.

• Fred Jackman, "77th Bengal Lancers,"* (Screen Gems) with Phil Carey. George Archinbaud, director.

• Ray Cory, ASC, "Playhouse 90," (Screen Gems). Arthur Hiller, director.

(Continued on Page 646)

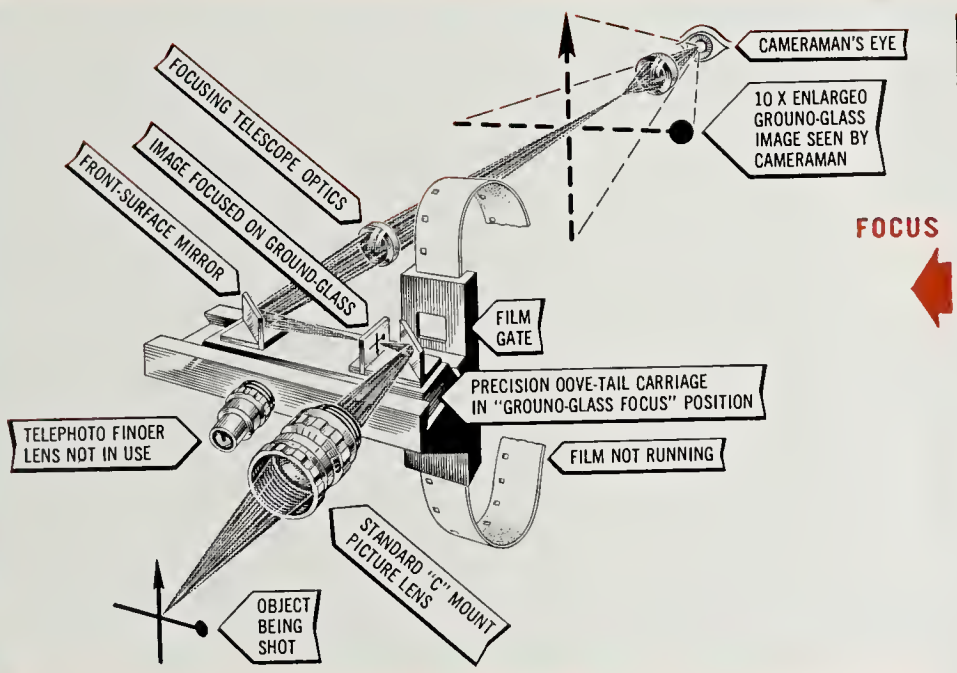
Auricon

"SUPER 1200" CAMERA

with Full-Frame Reflex Ground-Glass FOCUSING OPTICAL SYSTEM

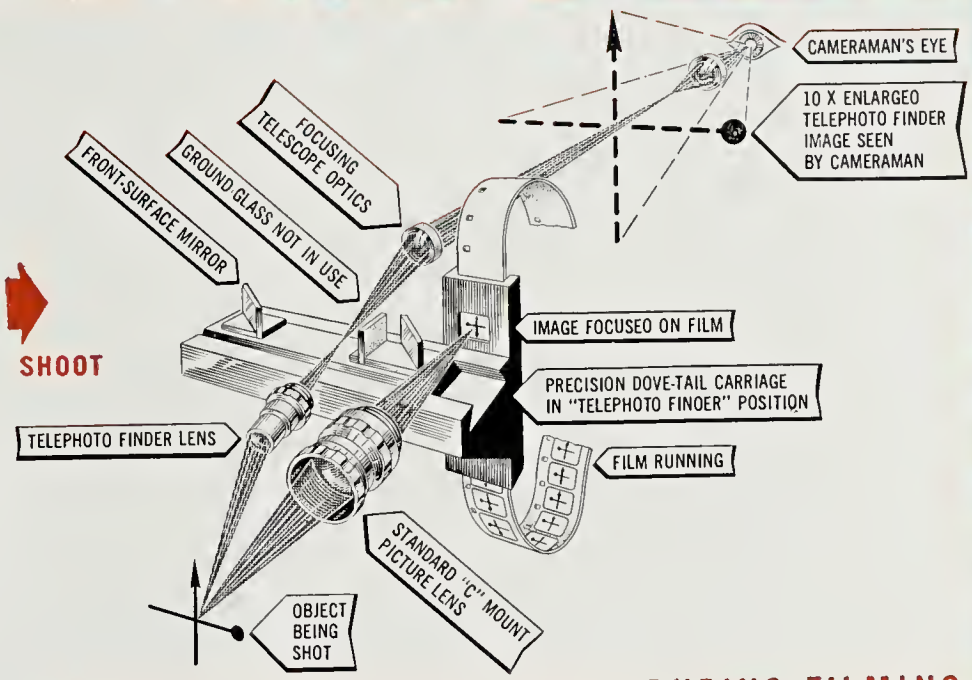


The unique and versatile features built into the 16mm Auricon "SUPER 1200" Sound-On-Film Recording Camera have prompted Producers and Cameramen to name the Super 1200 . . . "Finest 16mm Sound Camera ever built!" This Camera is "Self-Blimped" for whisper-quiet Studio work, has 33 minutes of continuous film capacity, Variable-Shutter or Kinescope "TV-T" Recording Shutter, plus the combined "Rifle-Scope" Telephoto Finder and Reflex-Focusing Optical Systems illustrated below. Its only equal is another Auricon "Super 1200" . . .



FOCUS

SHOOT



IN USE FOR FULL-FRAME GROUND-GLASS FOCUSING

"Super 1200" Reflex Ground-Glass Focusing-Frame indicates the field covered by any focal-length lens at all distances. A 10X enlarged Ground-Glass image is seen by the Cameraman, for needle-sharp critical focusing.

IN USE AS TELEPHOTO-FINDER DURING FILMING

No Camera-weight shift on tripod legs when moving from focus to film-shooting position with the "Super 1200." Camera-body does not shift to focus, or shoot film, as Optical-System Dove-Tail Carriage is only moving part!

THE CAMERA OF TOMORROW, HERE TODAY! ITS ONLY EQUAL IS ANOTHER AURICON "SUPER 1200"

Distributed by GraybaR — Offices in Principal Cities

Auricon Hollywood

GUARANTEE

All Auricon Equipment is sold with a 30 day money-back guarantee.

You must be satisfied!

Model "CM-74C" Features include...

- "Rock-steady" picture and High Fidelity Optical Sound-Track recorded on same film at same time, with "whisper-quiet" Camera & Sound Mechanism synchronously driven by precision-machined Nylon gears.
- "Super 1200" is Self-Blimped for completely quiet Studio use.
- Built-in Electric Camera Heater with automatic Thermostat-Control, provides reliable cold-weather Camera operation.
- Geared Footage & Frame Counter with built-in neon-glow indirect light.
- Two independent Finder systems (in addition to Reflex Ground-Glass Focusing through the Camera lens); a brilliant upright-image Studio Finder, plus the "Rifle-Scope" precision-matched Telephoto-Finder.
- 600 and 1200 ft. film Magazines available. Up to 33 minutes continuous filming.
- During picture exposure, your film runs through the Auricon "Super 1200" Film-Gate with the light-sensitive film emulsion accurately positioned on jewel-hard Sapphire Surfaces, an exclusive Berndt-Bach feature (U.S. Patent No. 2,506,765). This polished Sapphire Film-Gate is guaranteed frictionless and wear-proof for in-focus and scratch-free pictures, regardless of how much film you run through the camera!
- Priced from $4,652.15 complete for sound-on-film; $3,755.65 without sound; choice of "C" Mount lenses and Carrying Cases extra.
- Sold with a 30 day money-back Guarantee and One Year Service Guarantee; you must be satisfied. Write today for your free Auricon Catalog.

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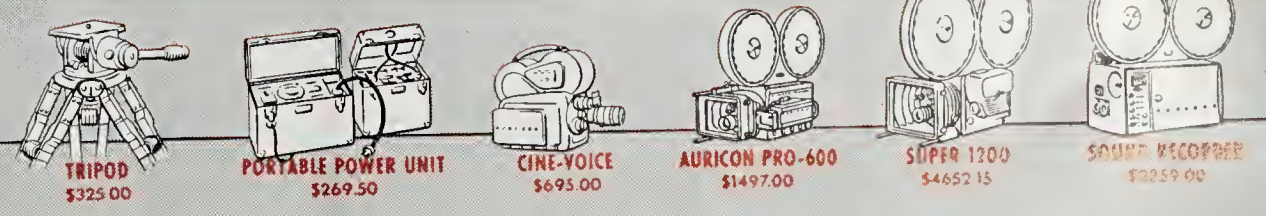
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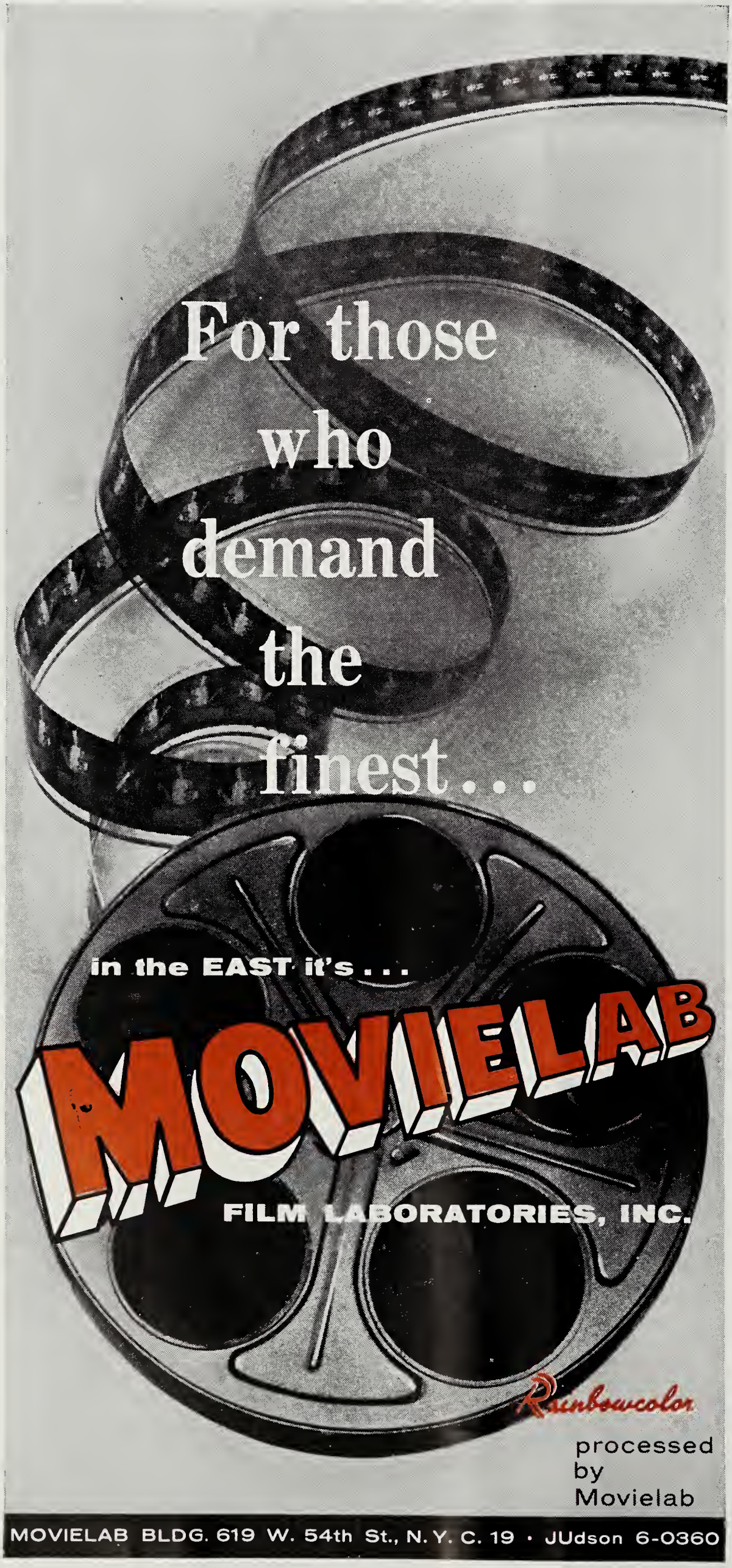
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MANUFACTURERS OF SOUND-ON-FILM RECORDING EQUIPMENT SINCE 1931

Auricon Hollywood





PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 644)

● HAL MOHR, ASC, "George Sanders Mystery Theatre,"* (Screen Gems). Fletcher Markle, director.

● HENRY FREULICH, ASC, "George Sanders Mystery Theatre,"* (Screen Gems). Fletcher Markle, director.

COLUMBIA (New York)

● ARTHUR J. ORNITZ. Nabisco & Wisk commercials.* (Screen Gems) Don Hershey, director.

FILMCRAFT STUDIOS

● VIRGIL MILLER, ASC, "You Bet Your Life,"* (Filmcraft Prods.), with Groucho Marx. Robert Dwan, director.

FOX WESTERN AVENUE STUDIOS

● CHARLES VAN ENGER, ASC, "Broken Arrow,"* with John Lupton. Various directors.

● LLOYD AHERN, ASC, "T. C. F. Hour."* Various directors.

GENERAL SERVICE

● JAMES VAN TREES, ASC, "Burns & Allen Show,"* (McCadden Prods.) with Gracie Allen and George Burns. Rod Amateau, director; Carnation & B. F. Goodrich commercials.* Rod Amateau, director.

● HARRY WILD, ASC, "Bob Cummings Show,"* (Laurmac Prods.) with Bob Cummings and Rosemary DeCamp. Norman Tokar, director.

● PHILLIP TANNURA, ASC, "The People's Choice,"* (Norden Prods.) with Jackie Cooper and Pat Breslin. Jackie Cooper, director.

● NEAL BECKNER. "The Adventures of Ozzie and Harriet,"* (Stage 5 Prods.) with Ozzie, Harriet, David, and Rickey Nelson. Ozzie Nelson, director.

● FRANK PHILLIPS, "Navy Log,"* (Gallu Prods. Inc.), Oscar Rudolph.

GOLDWYN STUDIOS

● NORBERT BRODINE, ASC, "The Loretta Young Show."* (Lewislor Inc.,) with Loretta Young. Various directors.

● EDWARD FITZGERALD, ASC, "Crossroads,"* (Federal TV Inc.). Various directors.

INDEPENDENTS

● LESTER WHITE, ASC, "The Kraken," (Levy-Gardner-Laven for UA release) with Tim Holt and Audrey Dalton. Arnold Laven, director.

● HAL MCALPIN, "Pawnee," (Gross-Krasne Prods. Eastman color; widescreen) with George Montgomery and Lola Albright. George Waggner, director. "Crime Beneath the Sea," (Nacirema Prods.) with Mara Corday and Pat Conway. John Peyser, director.

● ELLSWORTH FREDRICKS, ASC, "Trooper Hook," (Fielding Prod. for UA release) with Joel McCrea and Barbara Stanwyck. Chas. M. Warren, director.

● GUY ROE, ASC, Buick commercials,* (Mcconnachie Prods. Eastman color at Detroit Proving Grounds.) Jack Hivley, director.

● JOSEPH BIROC, ASC. "The Ride Back," (Associates & Aldrich Co. UA release) with Anthony Quinn and Lita Milan. Allan Miner, director.

● LIONEL LINDON, ASC, "Bail Out At 43,000," (Pine-Thomas Prods. for UA release) with John Payne and Karen Steele. Francis D. Lyon, director.

(Continued on Page 652)

You have tact, charm, a keen sense of humor and great intelligence...

...and you send your film to General Film Laboratories...

...because, in your celestial wisdom,

you recognize that it is the best source

of complete 16 mm and 35 mm services

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B&H 400′ mag. **$165.00**

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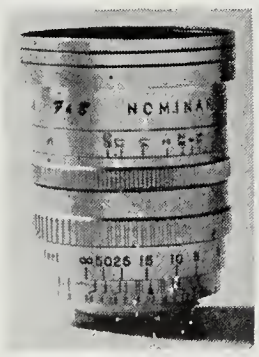
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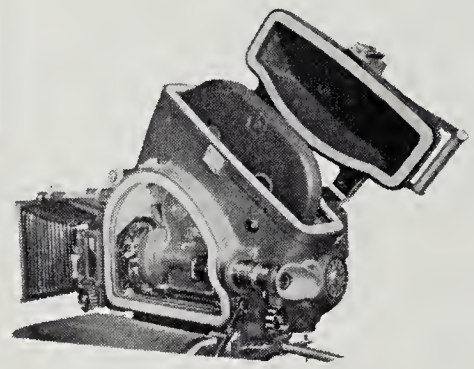
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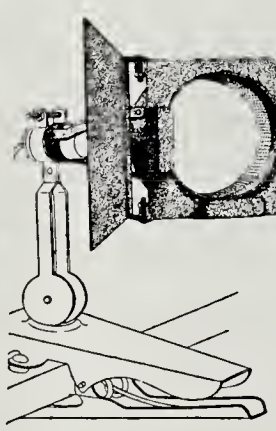


ARRIFLEX CAMERAS

For ARRIFLEX soles - service rentol - repoir

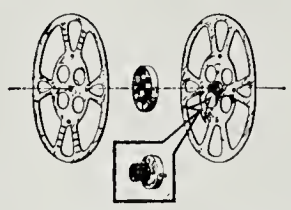
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THE NEW MAGNASYNC

MARK IX

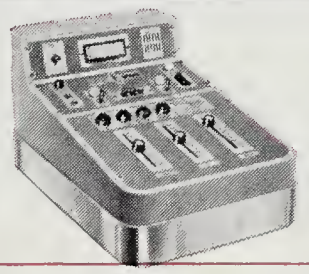
magnaphonic sound system



BASIC SYSTEM "A"

with built-in record-play amplifier and remote control assembly

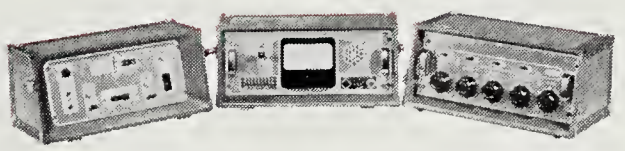
Priced from **$1995**



SYSTEM "B"

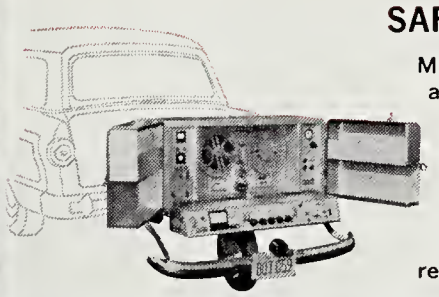
Basic system "A" with remote control assembly built into the new Magnasync Model G-932 slide wire attentuator microphone mixer in matching case

SYSTEM "C"



Basic system "A" including the popular Magnasync Model G-924 microphone mixer with remote control assembly in matching case

SAFARI CONSOLE



Mark IX film transport amplifier and remote control housed in blimped console for both studio and mobile trailer operation, complete with camera-recorder power supply

Our Proudest Achievement!

"We have designed into the MARK IX all those features most frequently described as "ideal" by our friends in the major studio sound departments, as well as mixers, recordists and technicians active in T.V., educational and commercial production.



We packaged the system in dural metal cases--a lightweight, durable enclosure that could stand unusual abuse. The control panel, which can be remoted, gives the operator fingertip pushbutton control of the machine. All amplifier and mechanical functions, including a sync footage counter, are incorporated into this little control panel.

Aside from the many features and conveniences, we have exercised extraordinary care in the fabrication, assembly and testing of the MARK IX system."

Bill Stutz

W. H. STUTZ, EXECUTIVE VICE PRESIDENT

"For over a decade Bill Stutz, Jim Green and I have worked together as a team--building equipment of which we are proud, and making friends to whom we are deeply grateful.

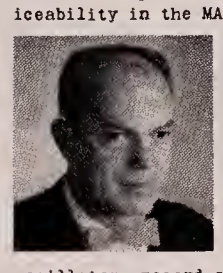


Teamwork, such as ours, is equally vital in your operation and this applies to both men and machines. Each of our several recording systems has been carefully planned to meet the varying requirements of producers throughout the world. Literally thousands of Magnasyncs have been selected with confidence, and are in daily operation as an important member of production teams.

Our magnificent, new MARK IX does not obsolete our other models in any sense of the word. This is the system we have styled and crafted to give you that extra "pride of ownership" that comes from knowing you have the best!"

D. J. WHITE, PRESIDENT

"We have emphasized maintenance and serviceability in the MARK IX amplifier. These factors were given as much consideration as performance in the belief that such a high quality amplifier can only remain so, if designed to sustain shock and remain reliable under extreme operating conditions.



We have made "plug-in" assemblies of the bias oscillator, record section and playback amplifier using subminiature tubes and components. With the amplifier mounted to the rear door of the film transport in a compound hinging arrangement, all components are readily accessible to the maintenance technician.

With its many unique features, carefully selected materials and special attention to detail, we have made the MARK IX our proudest engineering achievement."

Jim Green

J. W. GREEN, VICE PRESIDENT

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MAGNASYNC SYNCHRONOUS Magnetic Film Recorder — Magnaphonic SOUND SYSTEM

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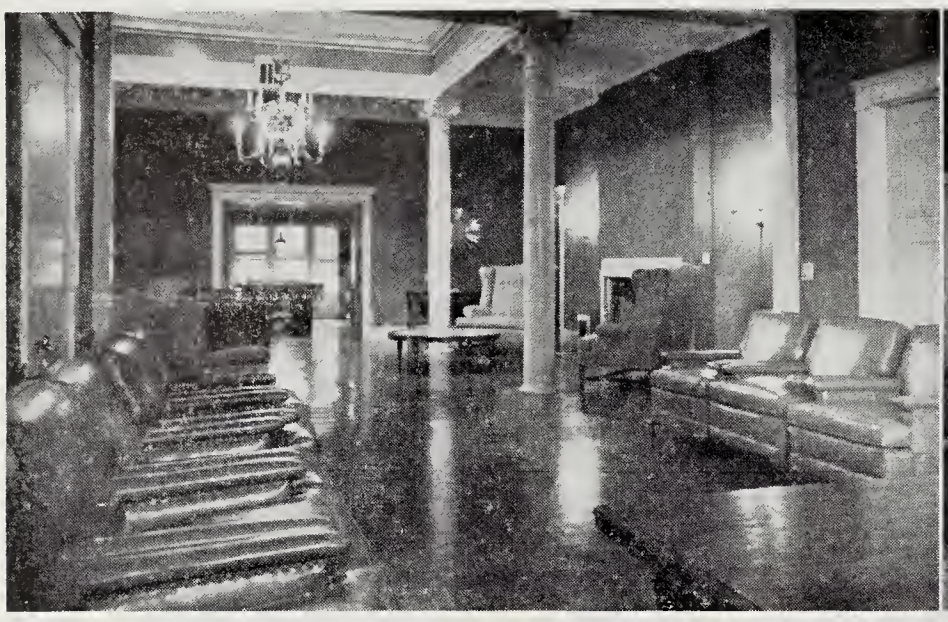
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NEW YORK — Camera Equipment Co., 315 W. 43rd St., New York 36, JUdson 6-1420. Cable Address CINEQUIP. **CHICAGO** — Zenith Cinema Service, Inc., 3252 Foster Ave., Chicago 25, Ill., IRving 8-2104. **SAN FRANCISCO** — Brooks Camera Co., 45 Kearney St., San Francisco, Calif., EXbrook 2-7348. **CANADA** — Alex L. Clark, Ltd., 3745 Bloor St., Toronto 18, Ontario, BElmont 1-3303.

HOLLYWOOD BULLETIN BOARD

News briefs about the A.S.C. its members, and important industry personalities





DECOR OF DIGNITY AND ELEGANCE marks refurbishing of American Society of Cinematographers' clubhouse in Hollywood, completed this month. Above view is from Board Room looking into main lounge and toward Billiard Room at rear.

CORK TILE FLOORS and modern textures mark decorative scheme throughout clubhouse. Above is view from lounge looking toward Board Room. Plaqued photographs of Society's Past-presidents hang on Board Room wall.



VIEW FROM Foyer, looking through lounge into Board Room. On either side of arch are ASC's "Walls of Fame" on which are hung photos of members who have won Academy Awards.—Photos by Arthur C. Miller, ASC.

Sol Halprin, ASC, head of 20th Century-Fox's camera department, returns early this month from a 5-week vacation and Mediterranean cruise to start seven of the studio's directors of photography preparing to shoot seven new productions scheduled to roll within next sixty days. Halprin visited Israel, Jerusalem, and Haifa during his overseas visit and had left the troubled Egyptian area just days before the hostilities began.

• • •

Joseph Ruttenberg, ASC, who has been directing the photography of Metro-Goldwyn-Mayer's "Harvest Thunder" in CinemaScope and color in France, winds up the assignment November 15th and heads back for Hollywood. He will visit friends in New York enroute.

• • •

Robert Sable, ASC, of Chicago, was a Hollywood visitor last month

• • •

Loren L. Ryder, with Paramount Studio in Hollywood since 1929, where he figured importantly in many technical developments including VistaVision, resigned as head of that studio's sound department last month in order to devote more time to his growing outside business, Magnetic Sales Corporation.

Ryder is a past-president of the SMPTE and an Associate Member of the ASC.

John Boyle, who served as president of the ASC during 1928-29, was elected 1st vice-president of the Society last month to fill the unexpired term of Joseph Ruttenberg, who has been in Europe the past six months on photographic assignments for Metro-Goldwyn Mayer.

Boyle's most recent photographic assignment was "The Restless Breed," which veteran Allan Dwan directed for National Pictures for Fox release.

• • •

Arthur Edeson, who has served on the ASC's board of directors since termination of his presidency of the Society in 1955, was also re-elected an officer last month. He was elected 3rd vice-president to succeed Milton Krasner, who has resigned his office due to extended photographic assignments overseas for 20th Century-Fox. Edeson served as ASC president from 1954 to 1955. Krasner is presently directing the photography of "Boy On A Dolphin" in Greece for 20th Century-Fox.

• • •

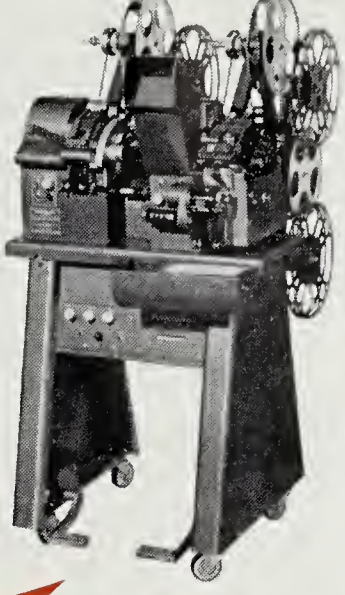
Franz Planer, ASC, and **Sam Leavitt, ASC,** returned from extended location filming assignments in Spain November first.

Planer directed the photography of "The Pride and the Passion," VistaVision-Technicolor production for Stanley Kramer, starring Carey Grant and Frank Sinatra.

Leavitt photographed "Flamenco" in VistaVision and color for Paramount.

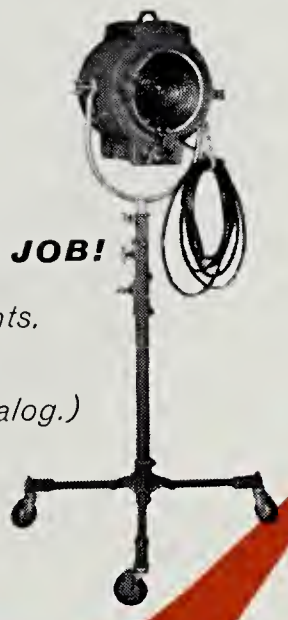
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(Now, on ONE editing machine,
the McAlister EDIMAC,
you can run 16 or 35 sound
with 16 or 35 picture.
It's 4 machines in 1.
Write for folder.)



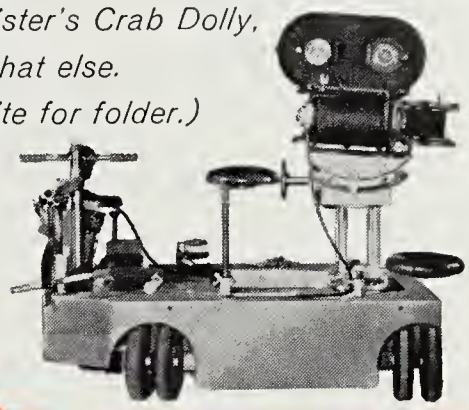
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(McAlister lights,
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what else.
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MILLER

"Fluid Action"

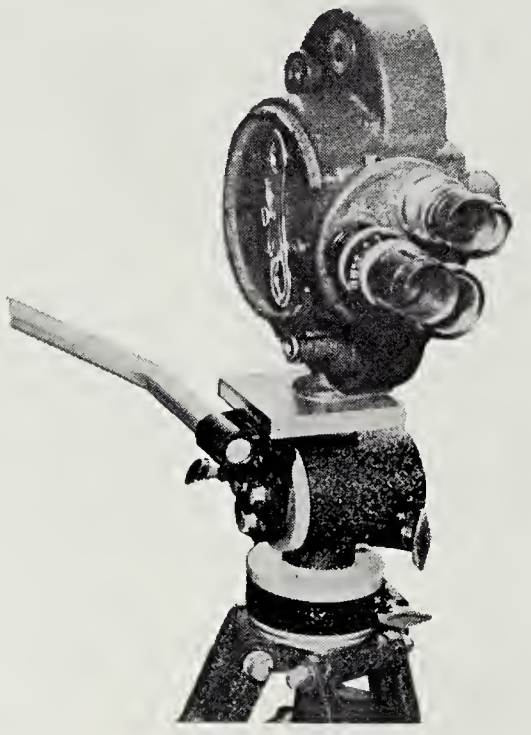
TRIPOD HEAD PATENTED

WORLD'S FINEST

STOPS FRICTION HEAD "JITTERS"

SAVES TIME. NO LOST FOOTAGE

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You Can Feel The Difference!

- Full 360° horizontal movement
- No shake or jitters
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- Breakaway at 18 R.P.M. pan
- Complete control for smoother panning in both horizontal and vertical positions
- Varied use with Bell & Howell, Bolex, Cine-Special, Arri-flex, F&B Auricon, and telescopes.
- Adapter plates available for Pro-Jr., S.O.S. and similar tripods
- Whatever camera is used, you will get better results with a Miller.

The MILLER "Fluid Action" head is designed for use with motion picture cameras, telescopes and similar mechanical, optical or electronic equipment where smooth panning and tilting movements are essential. This movement operates on a semi-hydraulic principle, which is patented throughout the world. It should not be confused with any friction-type movement.

Sold only by dealers.
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CONTROLLED OPTIMUM PROCESSING
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• 8 Hour Service Upon Request •

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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 646)

INDEPENDENTS

● BERNARD DRESNER, "A Dog Called Mr. Bozzi," (Chamartin Prods. Madrid; shooting in New York). Ladislao Vajda, director.

JERRY FAIRBANKS

● JERRY FAIRBANKS, "A. C." Spark Plug commercial.* Hal Yates, director.

KEYWEST STUDIOS

● WALTER STRENGE, ASC, Series of religious pictures.* William Claxton, director.

KLING STUDIOS

● BRYDON BAKER, "Death Valley Days,"* (McGowan Prods.). Stuart McGowan, director.

KTTV

● STUART THOMPSON, ASC, "Lassie,"* (Robert Maxwell Prods.) with Jan Clayton and George Cleveland. Les Selander, director.

● MACK STENGLER, ASC, "Captain David Grief,"* (Guild Films, Inc.), Stuart Hisler, director.

● KENNETH PEACH, ASC, "The Trial of Benjie Galt," (Grand Prod. for UA release; widescreen) with Sterling Hayden and Darryl Hickman. Sidney Salkow, director.

LINKLETTER PLAYHOUSE

● ALAN STENSVOLD, ASC, "People Are Funny,"* (Art Linkletter Prods.) with Art Linkletter. Irv Atkins, director.

METRO-GOLDWYN-MAYER

● ROBERT SURTEES, ASC, "Raintree County," (65mm and Color) with Montgomery Clift and Elizabeth Taylor. Edward Dmytryk, director.

● RUSSELL HARLAN, ASC, "Something of Value," (shooting in Africa), with Rock Hudson and Dana Wynter. Richard Brooks, director.

● JOSEPH RUTTENBERG, ASC, "Harvest Thunder," (CinemaScope & Color, shooting in France) with Mel Ferrer and Pier Angeli. Jeffrey Hayden, director.

● ROBERT BRONNER, "Ten Thousand Bedrooms," (CinemaScope and color—shooting in Rome) with Dean Martin and Anna Maria Alberghetti. Richard Thorpe, director.

● JOHN ALTON, "Designing Woman," (CinemaScope and Color) with Gregory Peck and Lauren Bacall. Vincente Minnelli, director.

● PAUL IVANO, "Lizzie," (Bryna Prod.) with Eleanor Parker and Richard Boone. Hugo Haas, director.

MIKARO STUDIOS (New York)

● J. BURGI CONTNER, ASC, "Diary of Jennifer Blake; AT&T commercial.* (Technicolor; Henry Strauss Prod.) Robert Wilmot, director.

MOTION PICTURE CENTER

● SID HICKOX, ASC, "I Love Lucy,"* (Desilu Prods.) with Lucille Ball and Desi Arnaz. James Kern, director; "December Bride,"* (Desilu Prods.) with Spring Byington, Dean Miller, Frances Rafferty, Jerry Thorpe, director.

(Continued on Page 692)

TECHNICAL QUESTIONS AND ANSWERS



Walter Strenge, A.S.C.

... to cinematography ...es of film production ...n readers and will be ...etter by Walter Strenge or ...alified members of the Amer... ...y of Cinematographers. Ques... ...d answers considered of general ...st will appear in this column.—*Ed.*

I recently read about a news cameraman in Oregon who has set up a nit rack and tank outfit for quick-essing of color film on a small , using 200-foot racks. Where can btain data on a similar setup? I ate a small laboratory, processing ly professional reversal films, and nterested in tackling color process-n a limited scale.—*H. G., New York,*

e color film which the Oregon news- is processing is undoubtedly the high-speed Anscochrome color re- l film. A processing instruction in is being mailed you by the r. A comprehensive article describ- he new Anscochrome color film ared in the August, 1956, issue of *ican Cinematographer.*

ere are presently many processing ines available that are suitable for ssing Anscochrome. These range ice from $80,000 on down. Manu- ers of such equipment regularly tise in the pages of *American natographer.* Possibly the lab you about is the rack and tank setup Forde Motion Picture Laboratory ttle, Washington, which processes chrome for station KOMO-TV. *n Kowalak, A.S.C.*

am preparing to shoot an outdoor lm on 16mm Kodachrome, which e released in 35mm color.

have one of the major film labs the release prints, using Eastman negative as an intermediate, would better quality release prints if the al were regular daylight Koda- e? Or Commercial Kodachrome? e is a difference, is it appreciable? ommercial Kodachrome is used in ming with no color correction filter yed to compensate for differences n emulsion lots, would it prove advantageous than regular Koda- e?—*R. E. S., Buffalo, N. Y.*

wering the first of your two ques- both daylight Kodachrome Type nd Kodachrome Commercial film Type 5268 will produce satisfactory results when blown up to 35mm Eastman Color negative and release-printed to Eastman Color Print film. However, Kodachrome Commercial film would appear to be a little more desirable for the following reasons:

1) Manufacturing and processing tolerances are more closely controlled. 2) Its lower contrast makes it more desirable for any duplicating work; and 3), Kodak's new internegative film was designed specifically for Kodachrome Commercial film.

The answer to your second question is "No."—*Walter Strenge, A.S.C.*

Q I wish to obtain a diffusion or soft-focus effect, similar to that which was common in Hollywood-made films around 1935. There is a certain liquid softness in this style of photography which I have been unable to match. I have tested most of the available diffusion and fog filters without achieving the desired results.—*R. L. H., Princeton, N. J.*

The diffusion effect you have in mind was probably achieved in the Hollywood films referred to by use of filters produced at that time by Harrison & Harrison, Hollywood. At one time they made diffusion filters in six grades ranging from just a suggestion of diffusion to almost fog-like effect.

Scheibe Filters Co., P.O. Box 46834, Hollywood, Calif., can also supply you with the desired filter or make it up special to your specifications.—*Walter Strenge, A.S.C.*

Q How does the Thrillarama system operate? I have expected to see this system described in *American Cinematographer*, as you did with Todd-A-O, CinemaScope, and others.—*J. V. L., Atlanta, Ga.*

Thrillarama is a new dual-camera filming process that produces a scene on two negatives, just as Cinerama produces it with three. In projection, two interlocked machines project the two halves of the picture and make it appear on the screen as one wide, unbroken scene. The sound track is recorded and played on a separate reel. Both closeups and long shots are photographed without distortion. The cameras used are made in France, but the photographic system was engineered and built by the Raphael G. Wolff Studio, Hollywood.

—*Walter Strenge, A.S.C.*

ONE CAMERA

16mm or 35mm

in 10 SECONDS!

Camerette 16/35

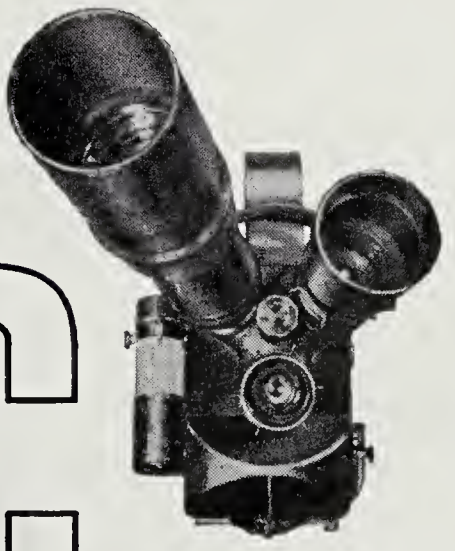
Reflex Motion Picture Camera

The perfect camera for the motion picture film maker working in both 16mm or 35mm color or black and white.

LOOK AT THESE ADVANTAGES—

- The same lenses, same motor drives, same sound blimp and accessory equipment used for both 16mm or 35mm — to convert simply change the magazine.
- Precise rugged movement
- Reflex viewing
- 200 degree adjustable shutter
- Divergent three lens turret
- Automatic film gate 400′ magazines 16 or 35mm — the 16mm magazine will accommodate daylight spools as well as standard core load.
- Light weight — only 14 pounds with 3 lenses, 400′ magazine, and 6/8 volt motor.

Write for brochure



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Manufactured by Ets. Cine. Eclair, Paris

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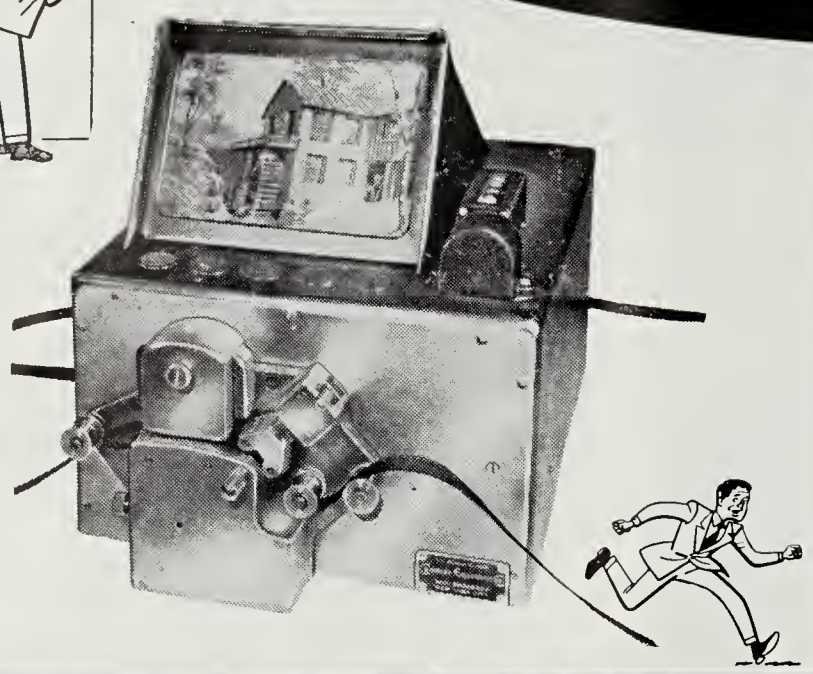
CAMERA EQUIPMENT CO., INC.

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Success Minded TV and Film Pros



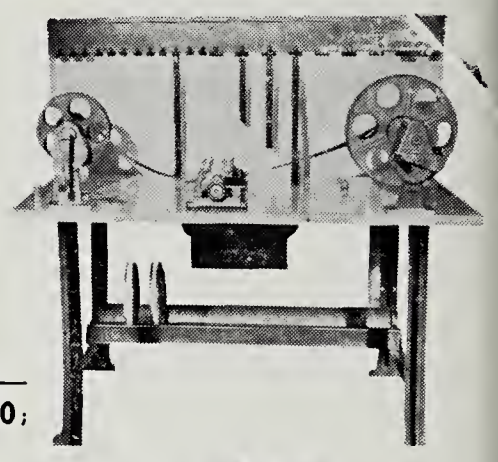


CECO PROFESSIONAL FILM VIEWER, permits editor to view his film from left to right on a large, brilliantly illuminated screen. Easy threading, portable, will not scratch film. Viewing screen size is 5¾" x 4¾". ED19-16mm model. Also available with sound reader installed.

$350.00 viewer only; additional **$75.00** with counter; additional **$150.00** with built in sound reader.

. . . look to CECO for Top tools and techniques

As most Pros know, CECO is headquarters for the world's finest cameras, recording and editing equipment and photographic accessories. But CECO is more than that. It maintains the finest service department in the East—also an engineering and design department. CECO is always happy to consult with film makers—either beginners or Academy Award Winners—about their technical problems. May we help you?



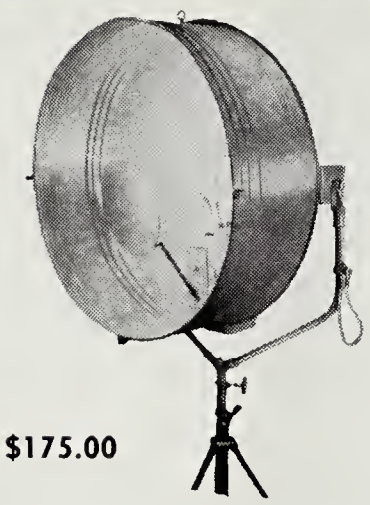
CUTTING AND EDITING TABLES are of heavy-gauge all-steel construction. Rigid frames—always level; block-front extensions for all rewinds; channel slide drawers. Baked enamel finish. Various models and sizes with light box, switch, utility drawer.

3′ x 4′ x 34" Formica top—film rack—no drawer **$71.50**; other sizes available.



$265.00

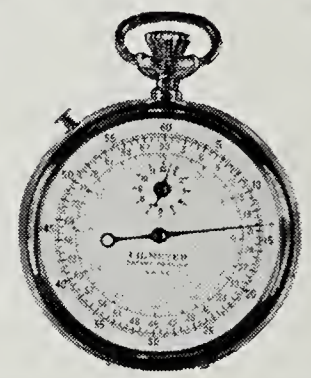
GR39-COLORTRAN GROVERLITE "5000" SENIOR KIT contains two Senior Lights with Senior Converter, 2 stands of chromed steel with column supports, packed in 2 fibre cases. GR40-same, with Master Converter. We also handle the full line of **Mole-Richardson** & **Bardwell McAllister** lighting equipment.



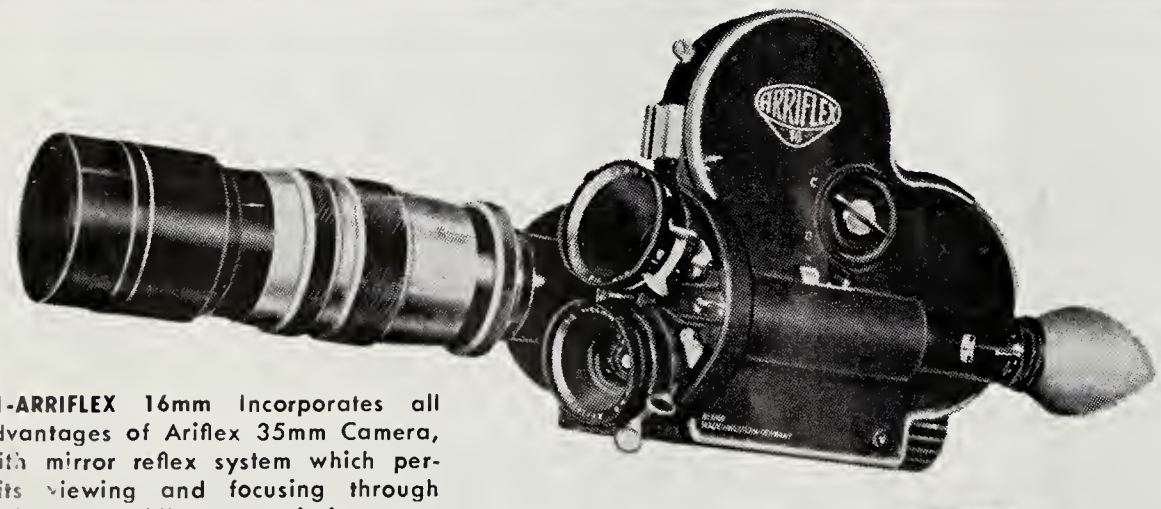
5000 Watt— **$175.00**

CL13-CECO 5000 WATT CONE LIGHT. Shadowless, will flood a large area with soft light. Can be placed close to actors who are able to look directly into it without blinking. Complete with switch, 25 ft. cable and yoke.

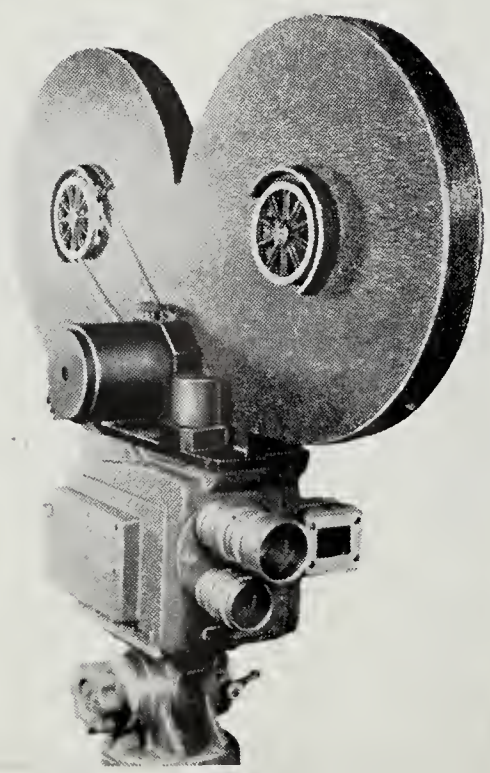
2000 Watt— **$110.00** 750 Watt—**$75.00**



SY45-CECO "FILMETER" STOP WATCH AND TIMER For 35 and 16mm cinematography. 1/5 second intervals. Black figures indicate film footage consumed for 35mm; blue figure for 16mm. Red figures indicate time consumed. Registers to 12 minutes. Time out for interrupted operation. Chrome finish, anti-magnetic. Available with slide release or pushbutton. **$14.50** up



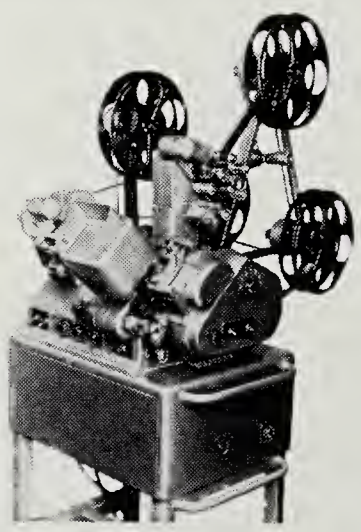
X1-ARRIFLEX 16mm Incorporates all advantages of Ariflex 35mm Camera, with mirror reflex system which permits viewing and focusing through taking lens while camera is in operation. Viewfinder shows clear, well-defined image correct parallax, uninverted and right—side-up; eyepiece has 10-power magnifier. 3-lens turret. Accepts 100-ft daylight loading spools; also accessory 400-ft magazines.



C16S68-CECO AURICON CINE-VOICE CONVERSION Cine-vaice camera madified to accept 1200-ft. magazines; has tarque motar far takeup. Also includes Veeder faotage counter.

$450.00 conversion only

Write for prices on complete Cine-voice cameras, converted for external magazines and all other madels of Aurican Cameras.



MOVIOLA FILM EDITING MACHINES "SERIES 20" designed so that short pieces can be used without putting the films on reels. Picture size 3" x 4" on 35mm models and 2⅜" x 3¼" on 16mm rear projection-type screen. Some models are equipped with reel spindles. Can be reversed by hand-operated switches. Various models available. Also synchronizers and rewinders.

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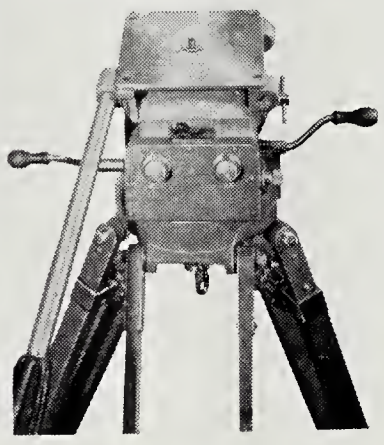
The improved **PROFESSIONAL JUNIOR** with the remavoble head —world standard of quality amang tripads, naw features the fallowing improvements: Simplified camera attaching methad with easily accessible knab. Double leg lack adjusting knobs, self aligning—assures pasitive leg lacking. Adjustable telescoping pan handle—makes it longer ar shorter. Pan handle sockets for left, right ar reverse tilt. Sturdier constructian af tilt and pan lacking levers. Cast in tie-down eyelets. NO INCREASE IN PRICE. **$150.00**



ADJUSTABLE COLLAPSIBLE ALUMINUM TRIANGLE insures rigid positioning of tripad legs. Prevents slipping and damage to floors.

Model C (illustrated) **$29.50**

Model B (less clamps) **$23.50**



TR11-CECO SMALL GYRO TRIPOD features "cantralled action". Has two speeds—slow ond fast—far both panning and tilting. Especially recommended for 16mm Mitchell, 16mm Maurer, B&H Eyemo and similor comeras. Weight, 19 lbs. Precision construction, olsa used os gear head. Cronk handles included.

$600.00 COMPLETE



TH 9 PROFESSIONAL JR. GEARED HEAD used on Prafessional Jr. standard tripad. Crank handles control pan & tilt action.

$150.00
HEAD ONLY



$18.00

TH1-CECO PROFESSIONAL JUNIOR HI-HAT is an adopter for extremely law-mount set-ups; also used far title stonds and permanent mountings. Handles either frictian or geared-drive tripad heads.



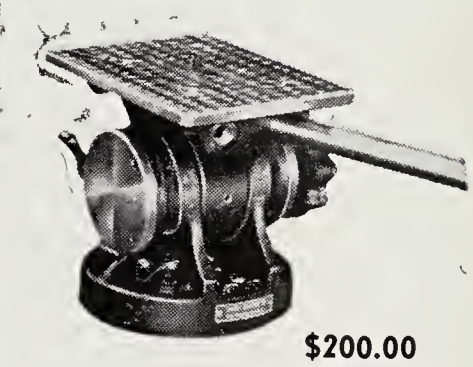
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TR12-CECO PROFESSIONAL JR. ADJUSTABLE WOODEN BABY TRIPOD accepts all Professional Jr. Tripod Heads. Has substantial shoe and spur. Measures 26" extended from floar to flange, 18" collopsed. Weight 7 lbs.



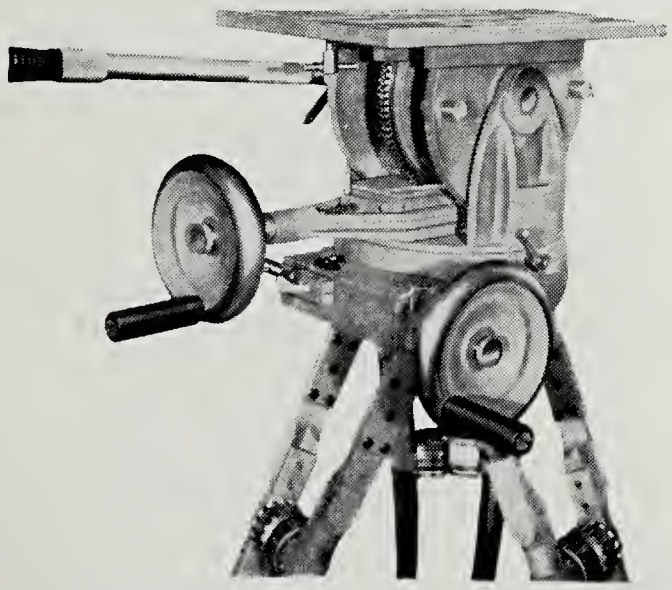
$260.00

CECO ALL-METAL TRIPODS have cast tap flanges and upper leg partian made of ane-piece aluminum allay castings. Lawer legs are 1½" seamless steel tubes, hard-chramed legs slide easily and have tie-rads ta center tube far autamatic leveling; calibratians help simplify set-up. Accepts "Balanced" TV head, Mitchell, ather similar Prafessianal Tripad heads.



$200.00
COMPLETE

TH11-PROFESSIONAL JR. SPRING HEAD is similar in construction ta Ceco Balanced TV head. Ideal far AURICON 600 and ather cameras. Spring-laad tilt assures that camera will return ta neutral pasitian when lever is in unlacked pasitian. Built-in spirit level.

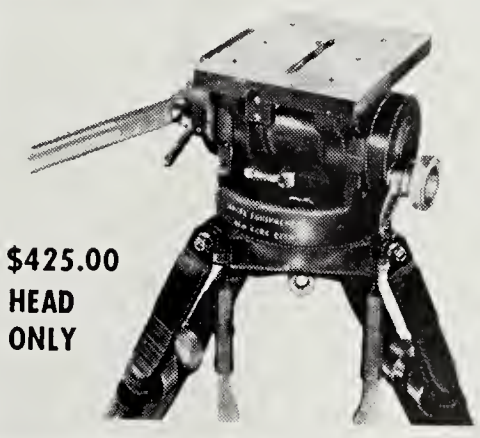


$1350.00 HEAD ONLY

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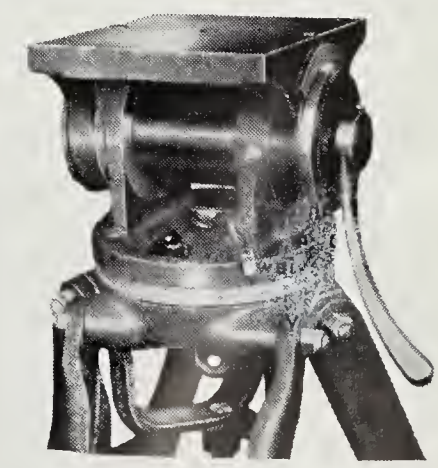
TH7-CECO BLIMP-TYPE GEARED HEAD affers two-speed pan and tilt—slaw and fast. Pravides extreme tilts, can be used as Freehead. Supersmaath actian, rugged constructian. Ideal far use with Mitchell BNC. Can be used with silent cameras with bridge plate.



$425.00
HEAD
ONLY

TH2-CECO NEW "BALANCED" TV HEAD, MODEL C Center-af-gravity adjustable, affers smaath tilt with 360° pan actian, perfect bolance. Quick relase handle lacks in position. Has tensian adjustment, built-in spirit level and telescoping extensian pan handle. Camera moveable an top plate to counter-bolance film load ar long lenses.

Tripad far "BALANCED" TV Head **$140.00**



$285.00 HEAD ONLY

TH3-CECO MICRO WAVE RELAY BEAM REFLECTOR HEAD is perfect for parabalas up to 6-foat diameter. Withstands tarques of 225 ft paunds in elevation and 150 ft paunds in azimuth. Enviranmental treated far extreme weather conditions.

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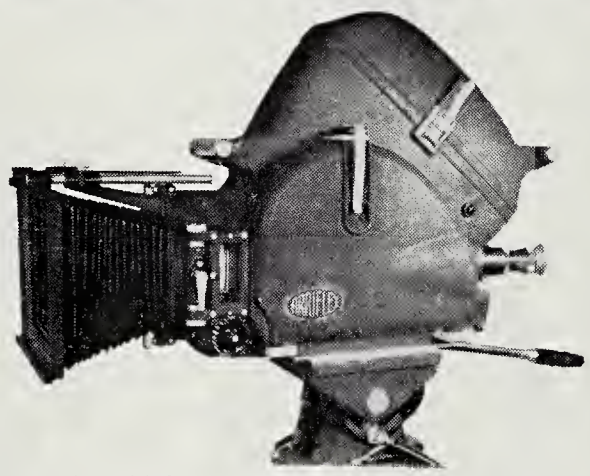
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WHY DID NORTH AMERICAN CHOOSE BIRNS & SAWYER AND ARRIFLEX?

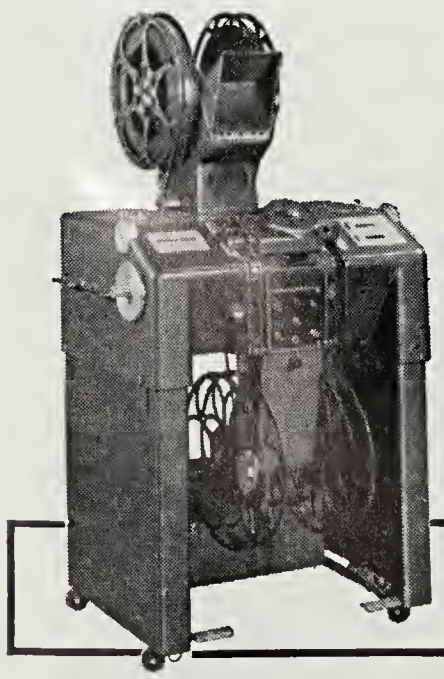


After testing and investigating all makes of camera equipment, North American Aviation found Arriflex the best buy, in terms of quality. And found that they could own this superb equipment for very little more than the rental charges of other makes. Birns & Sawyer was chosen as North American's source of the largest single order of Arriflex equipment ever placed in the U.S.—seven 16mm cameras, two 35mm cameras and two sound blimps. Proving again that, when it comes to ALL camera equipment, you can't beat the service, reliability and price structure of

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16 MM 35 MM

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The film editing machine which won an Academy Award

- No intermittent • Plays negatives safely • Least film damage
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Westrex Corporation

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Hollywood Division: 6601 Romaine Street, Hollywood 38, Calif.

Industry NEWS

Medical Movies Workshop

The first Medical Motion Picture Workshop, developed specifically for medical film producers and medical audio-visual personnel, will be presented on the sound stages of The Calvin Company, Kansas City, Mo., February 4, 5, and 6, 1957.

The three-day meeting will be devoted to discussion and screenings to assist cinematographers and producers in this specialized field, as well as to point up the broadening production of films within the field of medicine. Workshop will be open to all. A $60 tuition fee covers all sessions and a banquet.

• • •

Nine Arri Cameras to NAA

Said to be the largest single order for Arriflex cameras ever received by any U. S. distributor was that delivered last month by Birns & Sawyer Photo Supplies, Hollywood, to North American Aviation Company, Downey, Calif. Order called for a total of nine cameras: seven Arriflex-16's and two Arriflex-35's.

• • •

Mansfield to CFI

Lewis Mansfield, for past ten years plant manager of an eastern film laboratory, has been added to the managerial staff of Consolidated Film Laboratories, Hollywood, according to Sid Solow, CFI vice-president.

• • •

Underwater Movies

The first motion pictures ever made of the lost Italian liner Andrea Doria at the bottom of the sea, made by one of the foremost teams of skin divers, will be highlighted in Pathe Pictures' soon to be released issue of its "News Magazine of the Screen." The films were made at a depth of 160 feet. The skin divers used a 35mm motion picture camera known as the F-M-3, designed completely from the inside out for underwater work, and equipped with full external controls.

CORRECTION

Bob Duggan, head of Studio Lighting Co., Chicago, has been taking a lot of kidding from friends and assaciates since he was quoted—erraneously—in last manth's issue ("Studio Lighting Lights Demo Conventian") as stating: "With the low-light level requirements of Plus-X film, why make it a big praject?" In his original statement, Duggan referred to Tri-X film. We apologize to Duggan far the embarrassing editorial error. —ED.

GIGANTIC EXPANSION SALE!

OVER $100,000.00 WORTH OF MOTION PICTURE PRODUCTION EQUIPMENT SOLD 'WAY BELOW DEALER'S COST!

SOME NEW—SOME USED—ALL GUARANTEED!

LACK OF SPACE PREVENTS LISTING FULL DETAILS AND MORE EQUIPMENT. WIRE OR PHONE FOR MORE INFORMATION. LET US KNOW WHAT YOU NEED. ACT FAST!

BE SMART—CALL CAMERA MART—PLaza 7-6977

WALL 35mm single system sound camera, Modulite variable density track, amplifier, power supply, 2-1000′ & 4-400′ mags., Mitchell viewfinder, sunshade, filter holder, 12v-24v motor, buckle trip, 4 lenses, mike, headset, all cables, cases. Value over $14,000.00

SPECIAL $3,495.00

MITCHELL 35mm Standard camera, 3 lenses, 2-1000′ mags., viewfinder, sunshade, filter holder, motor, tripod, all cases. Excellent built-in features, value over $9,000.00

SPECIAL $4,695.00

CINEPHON 35mm Rackover camera, 3 lens turret, 4-200′ mags., dissolving shutter, motor, viewfinder, 3 lenses, complete body rackover, value over $3,000

SPECIAL $795.00

CINEPHON 35mm newsreel camera, 3 lens turret, reflex focusing, 2-200′ mags., motor, 3 lenses, case. Value over $2,000.00

SPECIAL $595.00

ARRIFLEX 35mm reflex camera, latest model IIA, 3 lenses, 2-400' mags., complete with Arriflex blimp and sync motor. All in like brand-new condition. Value over $5,000.00

SPECIAL $3,995.00

ARRIFLEX 35mm reflex camera, model II, 2-200' mags., 3 Zeiss lenses, motor, sunshade case, excellent condition, value over $2,500.00

SPECIAL $995.00

CINEFLEX 35mm reflex camera, motor, 2-200′ mags., 2 lenses, case. Excellent. Value over $2,000.00

SPECIAL $549.50

EYEMO Q camera, 2-400′ mags., motor, 3 lenses, excellent, value over $2,000.00

SPECIAL $1,195.00

EYEMO Q compact turret, drum finder 3 lenses, excellent, value over $1,200.00

SPECIAL $625.00

EYEMO K adapted for motor and magazines, with zoom type finder, filter slot, 2″ lens, case, value over $1,000.00

SPECIAL $595.00

EYEMO K, 2″ lens, filter, handle, strap, case, excellent, only a few left. Value $800.00

SPECIAL $125.00

BERNDT-MAURER 16mm camera, pilot pins. 2-400′ mags., sync motor, sunshade, finder, case, excellent, value over $3,000

SPECIAL $1,795.00

MAURER Type 05 camera, late model, 2-400′ mags., sync motor, 12v. motor, finder, sunshade, case, value over $5,000.00

SPECIAL $3,495.00

CINE SPECIAL II, like new, 100' chamber, 25mm Ektar f1.4 lens, value $1,100.00

SPECIAL $745.00

FILMO 70DAF converted for magazines, with drum finder, excellent, value $400.00

SPECIAL $249.50

FILMO 16mm hi-speed camera, 1″ f1.5 lens, excellent, value over $450.00

SPECIAL $195.00

AURICON Pro-200 single system soundcamera, six 200′ mags, auto parallax finder, two cases, excellent condition, value $1,800.

SPECIAL $1,195.00

CAMART 17.5 mm magnetic film recorder, Magnecord 3 channel mixer, playback amplifier and speaker, erase, counter, two cases. Like new value over $2,500.00

SPECIAL $995.00

HALLEN B-22 magnetic recorder for 17.5 mm, two channel mixer, playback amplifier and speaker, erase, counter, two cases, unit demonstrator, Value over $2,100.

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PRESTO K-8 disc recorder, 33 and 78 rpm, like new demonstrator, with mike and cables, value over $350. Offered way below cost

SPECIAL $175.00

BRUSH BK443 ¼″ tape recorder, portable model, like new, demonstrator, value $300.00

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VISTASCOPE wide screen lens for 16 mm. Very fine definition throughout. Value $125.

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MOVIOLA 35 mm. silent pictures with 35 mm. optical sound, very fine value $1400.

SPECIAL $750.00

PAIR DEVRY 35mm sound projectors, 2000' cap. 1000 watt lamp, 4'' lens, amplifier, and speaker. Very fine, value over $3,000.00

SPECIAL $595.00

PAIR HOLMES 35mm sound projectors, 2000′ cap. 1000 watt lamp, 4″ lenses, amplifier, speaker. Excellent, value over $2,000.00

SPECIAL $495.00

VICTOR 16mm sound projector, single case, like new, demonstrator. Value $375.00

SPECIAL $195.00

AMPRO 16mm Arc projector, hi-intensity lamphouse, rectifier, amplifier, speaker, stand, projection lens, very fine. Value $2,000

SPECIAL $495.00

MOVIOLA 35mm sound reader with amplifier and speaker, excellent. Value $200.00

SPECIAL $59.50

BELL & HOWELL Exchange model 35mm electric splicer, extra large tables, pedestal type, very fine condition. Value $1,100.00

SPECIAL $575.00

ZOOMAR 16 varifocal lens, f2.8, zooms from 25mm to 75mm. Like new. Value $600.00

SPECIAL $395.00

BOLEX STEREO 3-D unit for Bolex H-16 camera, taking lens, projector adapter, Screen, viewing glasses, demonstrator. VALUE $395.00

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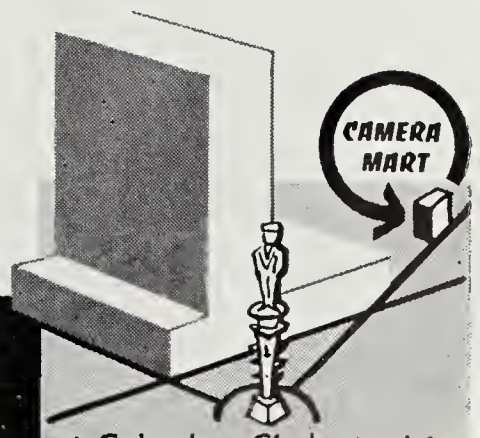
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START OF EXODUS, biggest scene in history of motion pictures, with the largest number of extras ever to appear on the screen moving through the biggest set ever built. Set, for "The Ten Commandments," recreates huge gates of the Biblical city of Per-Rameses. On apex of camera crane, directly behind the VistaVision camera, sits cinematographer Loyal Griggs; below, to his right is Director Cecil B. DeMille. In center foreground is Charlton Heston as Moses leading Exodus march.

LOYAL GRIGGS' inspired VistaVision cinematography contributed enormously to effectiveness of the performances in closeup of Charlton Heston, left, who plays Moses, and Yul Brynner essaying the role of Rameses in "The Ten Commandments."



CINEMATOGRAPHY UNSURPASSED

Filming of Cecil B. DeMille's "The Ten Commandments" rated the biggest photographic undertaking of all time.

By ARTHUR ROWAN

IN SHEER MAGNITUDE ALONE, the photography of Cecil B. DeMille's "The Ten Commandments" surpasses all other motion picture productions. This monumental photographic achievement, in terms of pre-production preparation, execution, and the amount of color negative used, has never been equalled in the annals of Hollywood motion picture history.

Ten years were spent in planning the production: three years were required for preparation and writing of the script; and, finally, more than two years were spent in the actual filming. In its final form the picture runs three hours and forty minutes.

The medium of VistaVision was chosen in order to capture the spectacle scenes in all their scope and majesty. These eye-widening scenes include the building of the glittering, magnificent city of Per-Rameses, with the toiling masses of the Children of Israel laboring in tears and sweat under the lash of the taskmasters; the endless expanses of the actual Biblical wilderness of Shur and Sin through which Moses passed; the drama of the Burning Bush for which key scenes were filmed upon Mt. Sinai itself; the Biblical plagues, such as the waters turning to blood, the hail from a cloudless sky and the death of Egypt's first-born; the Exodus of the Children of Israel from the city of the Pharaoh, involving scenes on a scale never before captured by a motion picture camera; the hosts of Pharaoh's chariots thundering after the freed slaves; the parting of the Red Sea through which the Children of Israel pass; the chariots of the Pharaoh being engulfed by massive walls of water smashing down upon them; the evil mass worship of the Golden Calf and the tremendous impact of the fiery finger of God writing the Ten Commandments upon the Tablets of Stone.

The sequence in which the Red Sea is divided and then closes again is likely to be acclaimed the most spectacular special effects sequence ever conceived and produced since movies were invented.

Loyal Griggs, A.S.C., directed the photography of "The Ten Commandments." Contributing additional photography under Griggs' supervision were A.S.C. members John Warren, Wallace Kelley, and J. Peverell Marley. John Fulton, A.S.C., directed the Special Photographic Effects of the picture, considered the greatest single contribution of its kind. And in the final phases of the production there were the Optical Effects Photography by Paul Lerpae, A.S.C., and the Process Photography directed by Farciot Edouart, A.S.C.

Loyal Griggs was the logical candidate for the assignment to direct the photography of DeMille's greatest production. Culminating a photographic career of some 30 years on the

(Continued on Next Page)



YUL BRYNNER rehearses for a closeup as Director Cecil B. DeMille, right, and Director of Photography Loyal Griggs look on. Ready to roll for the take is the VistaVision double-frame camera.



SACRED SITE—On a steep slope of remote and hallowed Mount Sinai, Cecil B. DeMille directs a scene for "The Ten Commandments." Covering the action are two VistaVision cameras. Location site, selected for its authenticity, proved toughest of all locations in Egypt.



ALL FOUR VISTAVISION cameras are assembled here to photograph the chariot drive against the fleeing slaves—one of the big spectacle sequences in "The Ten Commandments."



LOOKING THROUGH FINDER of VistaVision camera, Director DeMille checks on a new camera setup prepared by cinematographer Loyal Griggs and his crew for an interior for "The Ten Commandments."



DeMILLE gives final instructions before camera starts to roll on closeup of Anne Baxter. Here may be seen diffused quad-lights mounted above comera to provide special, soft closeup lighting.



HIGH IN RAFTERS OF SOUND stage DeMille directs action from behind the camera mounted on Chapman boom. Note dual quad-lights mounted immediately above the VistaVision camera.

Paramount lot, Griggs had only recently displayed his singular camera artistry in the photography of Paramount's "Shane," for which he received an Academy Award. Subsequently, the studio selected him to direct the photography of "White Christmas," its initial VistaVision production. Following this, he filmed two other pictures in the same wide-screen process. Thus, by the time Mr. DeMille was ready to choose his cameraman for "The Ten Commandments." Griggs had become the most experienced director of VistaVision photography. By now DeMille had elected to make "The Ten Commandments" in VistaVision and color, and Hollywood's most challenging photographic assignment went to Loyal Griggs.

The assignment came during the final pre-production stages of the picture, for there was yet the big task to be fulfilled of surveying Egyptian locales and mapping the location sites. Griggs accompanied the survey party which flew to Egypt in the fall of 1953. During the party's three-month stay, he studied Egyptian vistas the full length of the Nile, and for miles on either side, evaluating their possibilities from a pictorial standpoint as well as their accessibility. Mr. DeMille had indicated a desire to film as much of the production as possible on the actual locales of Moses' greatest acihievements centuries ago, in order to give the picture authenticity and the utmost religious significance; and so it was that the historical locations on DeMille's list, as mentioned in the Book of Exodus, were carefully surveyed

(Continued on Page 680)

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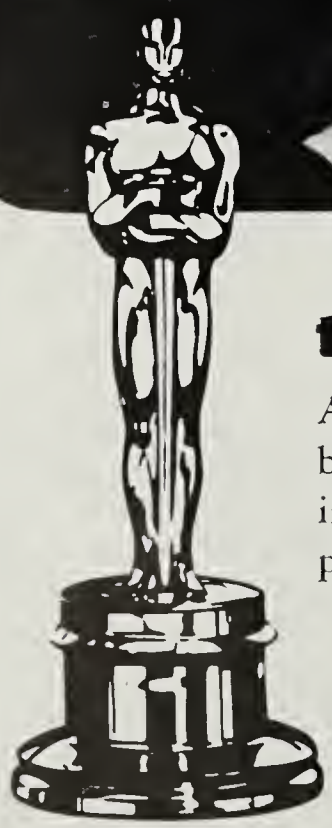
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FIG. 1—COMPONENT PARTS of prototype model of dielectric heater unit designed for use on professional-type film splicers. These include power supply 2, oscillator 3, LH splicer plate 4, push-button 6 and neon indicator lamp 7.

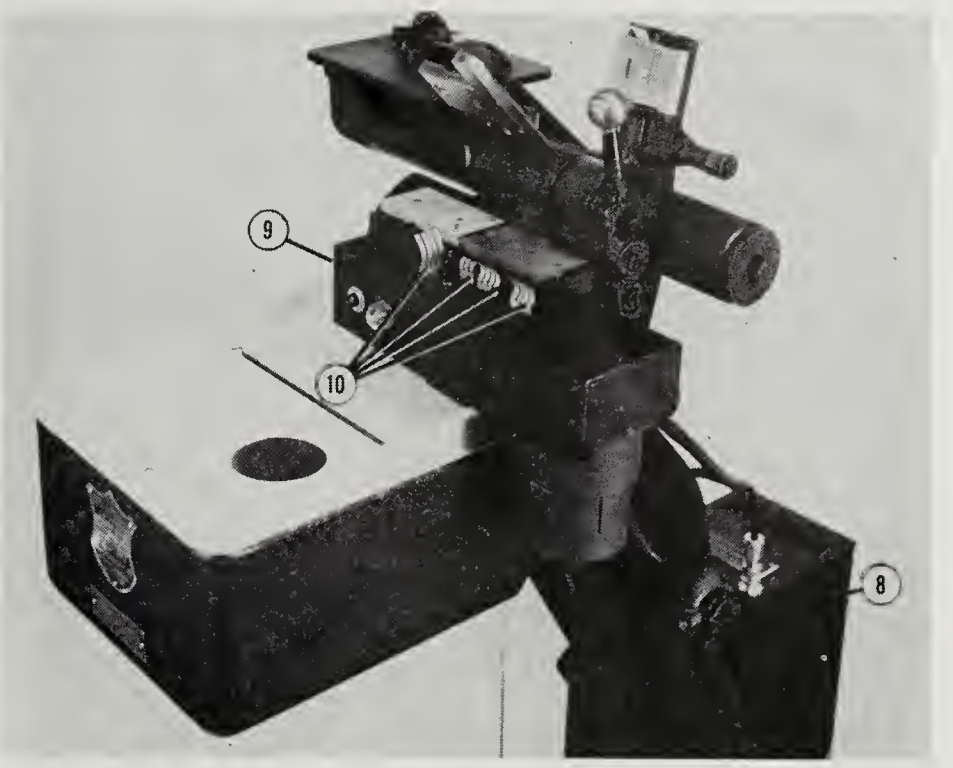


FIG. 2—COMPONENTS INSTALLED on a Bell & Howell professional splicer. Power supply is mounted on rear of pedestal at 8, and oscillator box just below splicer jaws at 9. The springs 10 provide positive short path grounding of upper splicer jaws when closed.

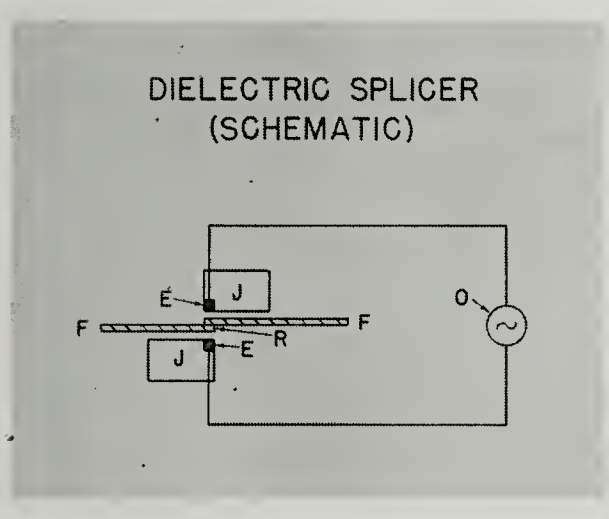


FIG. 3—Films F are held between splicer jaws J having electrodes E which cause weld of two films when high-frequency current is switched on.

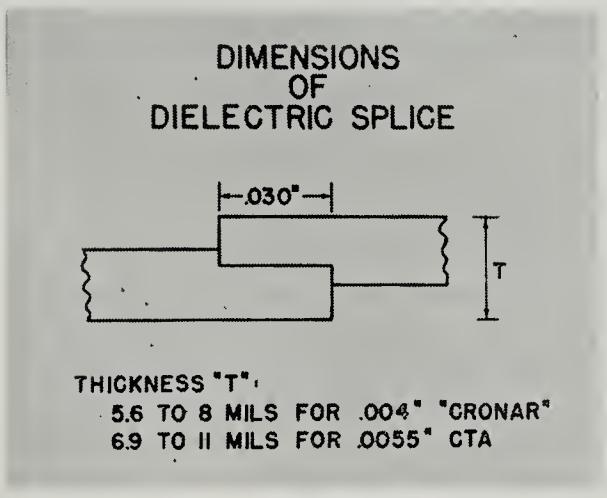


FIG. 4—Small overlap has important implications for wide-screen frames where frame separation is held to an absolute minimum.

Electronic Splicing

New splicing method uses no cement, produces almost indestructible film weld in one second.

By JOHN FORBES

ONE OF THE problems that remained for Du Pont engineers to solve, following the company's development of its tough, thin Cronar film base, was a satisfactory means of splicing it. The first successful splicing of Cronar involved the use of pressure-sensitive tape made from Mylar polyester stock. Continued research by company engineers has resulted in a completely new technique known as dielectric splicing, which involves an electronic device that produces a film weld said to be superior to any other splicing method known.

High-frequency current flowing between two electrodes on a modified commercial splicer fuses the film together within approximately one second. Overlap needed is less than usually required for ordinary motion picture film splices. The dielectric heat weld is permanent and is as insensitive to moisture and temperature as the film itself.

The new method, which employs no cement or other adhesives, may be used to join triacetate to triacetate film base and to splice Du Pont's Cronar film base to Cronar. However, triacetate cannot be successfully spliced to Cronar, and vice versa, by the dielectric method. The narrow overlap of the dielectric splice (30 mils versus 72 mils for conventional solvent splices) is expected to be of particular interest and value in negative splicing and also in the splicing of wide-screen positives where frame separation is held to an absolute minimum.

The essentials of the new method are shown schematically in Fig. 3. The films F to be joined are placed between the splicer jaws J. Inserted in the end of each of these jaws is an electrode E. These electrodes, together with the films to be spliced, form part of the circuit of a high-frequency oscillator O. Energizing the circuit which is done by momentarily pressing the switch 6, Fig. 1, causes a high-frequency current to flow between the electrodes through the region R, heating the films to the point

(Continued on Page 689)



INGRID BERGMAN (left background) patiently awaits lineup of Jack Hildyard's CinemaScope camera, while director Anatol Litvak (right) discusses action for the scene with an assistant.



PATTERN OF THE lighting established by Jack Hildyard for one of the large interior sets erected on sound stage of M-G-M's Borehamwood studio in London for 20th Century-Fox's "Anastasia."



SHOOTING NIGHT exteriors on vast set erected on back lot of Borehamwood studio. Church in background is exact replica of Russian Orthodox church in Paris; taxed studio's lighting capacity to limit.



DIRECTOR ANATOL LITVAK (grey haired and hatless, center) discusses new camera setup with director of photography Jack Hildyard and assistant on exterior side street set at Borehamwood.

Filming "Anastasia"

By FREDERICK FOSTER

BRITISH CINEMATOGRAPHER Jack Hildyard traveled all the way to Hollywood a few months ago to gain first-hand knowledge of CinemaScope lenses and CinemaScope photography. Twentieth Century-Fox had engaged him to direct the photography of "Anastasia," which was to be shot in England, France and Denmark, and which was to reintroduce screen star Ingrid Bergman to American theatre audiences after an absence of nearly a decade. It was Hildyard's first CinemaScope assignment.

Hildyard's smart camera artistry came into prominence in this country following the national release of "Summertime," starring Katherine Hepburn; and 20th-Fox felt Hildyard was the man to entrust with the filming of its pro-

duction of "Anastasia," which was to be produced entirely in Europe at a cost of $3,500,000. Because Fox's contract cinematographers were committed for pictures far into the future, it was necessary to engage someone else—preferable a cinematographer having experience in Europe.

At 20th Century-Fox's Beverly Hills studio, Hildyard observed Academy-Award winners Leon Shamroy, A.S.C., Milton Krasner. A.S.C., and and others light and photograph sets for CinemaScope color productions. Following several weeks of such "on-the-set" study and a briefing on CinemaScope optics by 20th's camera department head, Sol Halprin, A.S.C., Hildyard returned to London, and then flew to Copenhagen, Denmark, where initial shooting on "Anastasia" began. Directing the Buddy Adler production was Anatole Litvak, whose "Snake Pit" is still regarded as one of 20th-Fox's most sensitive and successful productions.

Based on the hit play by Marcelle Maurette, translated to English by Guy Bolton, and adapted for the screen by Arthur Laurents, the film tells the story of a starved, destitute girl, played by Ingrid Bergman, who is rescued from suicide in the Seine by a Russian ex-General (Yul Brynner) and forced to pass herself off as the Princess Anastasia, only living daughter of the last Czar of Russia, Nicholas II. The ex-General's plan is to, in this way, gain control of the £10,000,000 legacy left by the Czar. Later he falls in love with the girl and loses his great desire for the fortune.

Shooting on the film began May 21, 1956, in Copenhagen where the palaces, squares and restaurants of that lovely city were used as natural locales and photographed by Hildyard and his camera crew. Location shooting then shifted to Paris, where for more than a week the company worked at night and in a light rain filming scenes with Miss Bergman and Mr. Brynner in the narrow, tortuous Parisian streets and on the banks of the Seine near the Pont d'Alexandre III. Then on June 11, shooting switched to London, where the company completed the picture at M-G-M's Borehamwood Studio.

One of the most lovely and moving scenes in the film is one of the early sequences in which Brynner first meets Miss Bergman in a churchyard, while hundreds of worshippers—all carrying lighted candles—make way for a Russian Easter procession of white and gold robed priests and their assistants carrying ikons, censers, and the Crucifix, and followed by a choir of 30 Russian voices singing an ancient Easter hymn in Slavonic tongue, as sung in the services in the Russian Orthodox Church.

(Continued on Page 686)



SHOOTING LOW-ANGLE shot of horses and Indians in dramatic chase of whites for C. V. Whitney Pictures' "The Searchers." Cinematographer Winton Hoch, A.S.C., and Director John Ford conceived method of making shot with camera in pit and erecting rails to channel onrushing horde directly over the camera.



LAST MINUTE check is given the Technicolor VistaVision camera before signaling the Indian horsemen for the take. Later, camera was partially concealed with a blanket after horses shied away from the "strange object" during rehearsals.

Thrill Shot . . .

ACTION FILMS — the kind C. V. Whitney Pictures, Inc., produces for Warner Brothers' release — invariable calls upon the director of photography for some rare and dramatic camera treatment. Such a traditional occasion arose during the course of filming "The Searchers," directed by John Ford and starring John Wayne, and photographed by Winton Hoch, A.S.C., three-time Academy Award winner for cinematographic achievement.

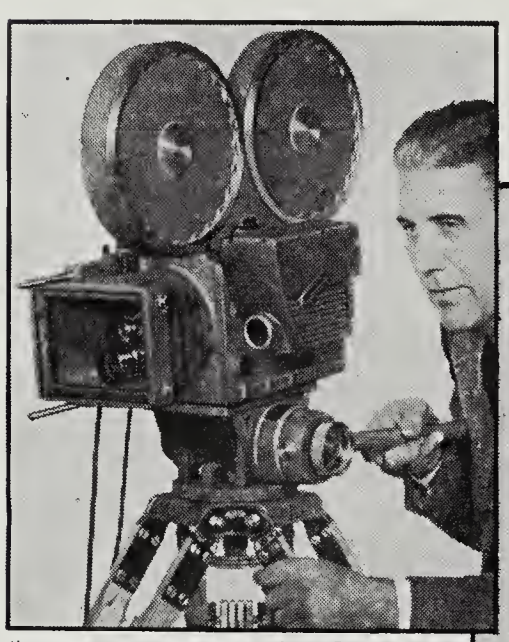
Photographed in VistaVision and color almost entirely in the famous Painted Desert area of Arizona, the story comes to a climax in a dramatic Indian chase of the whites. Here director Ford wanted

(Continued on Page 688)

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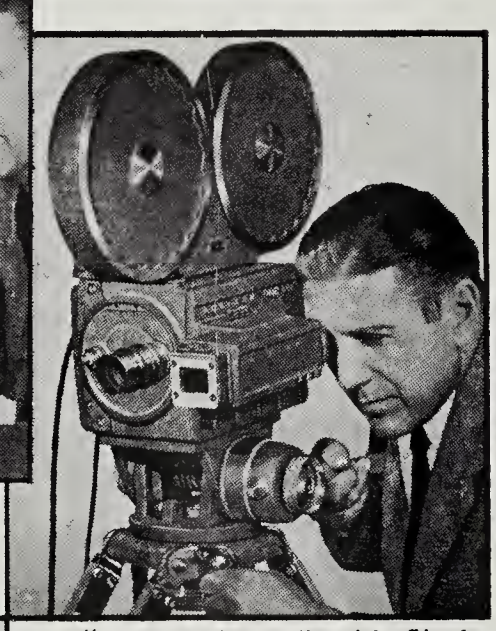
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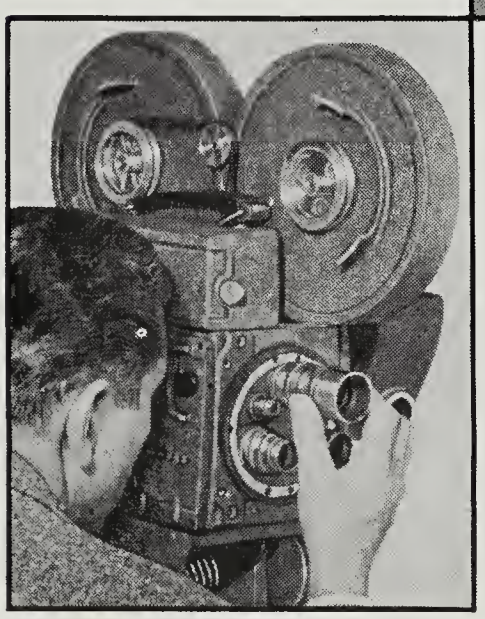


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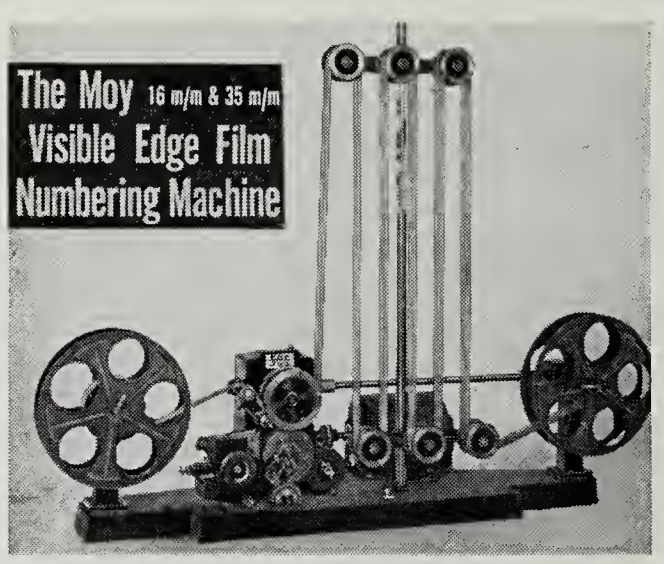
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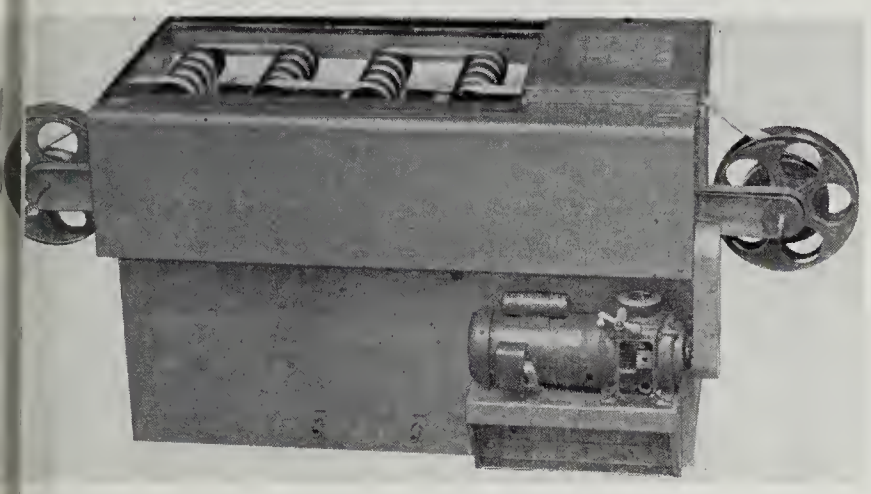
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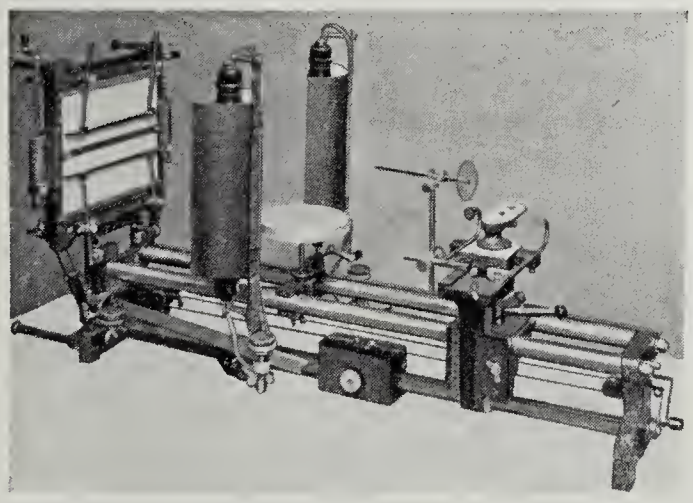
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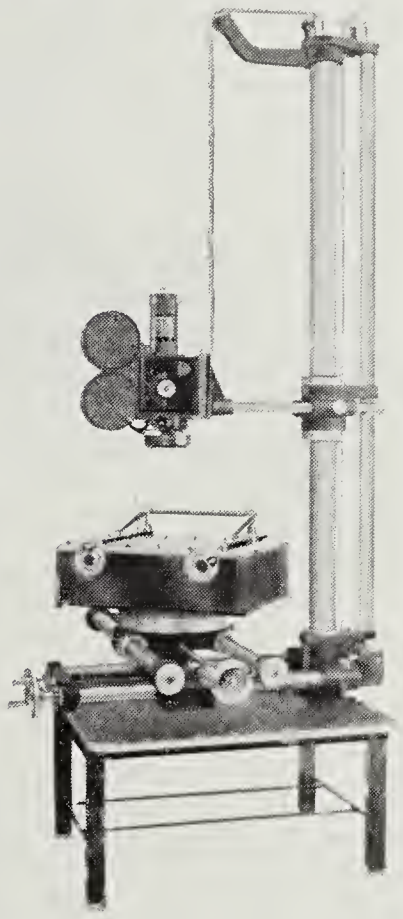
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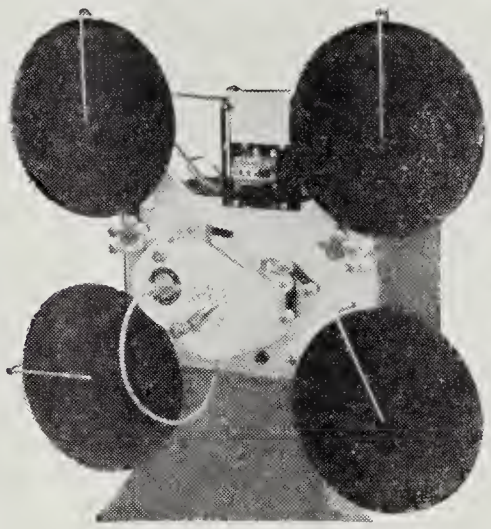
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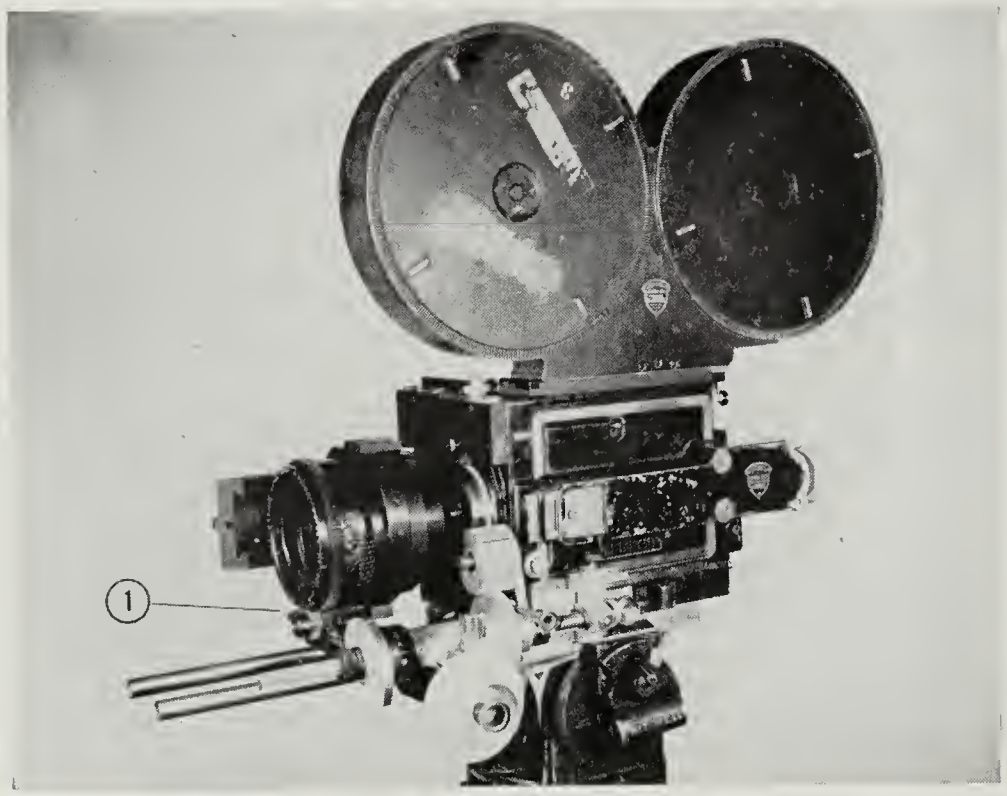
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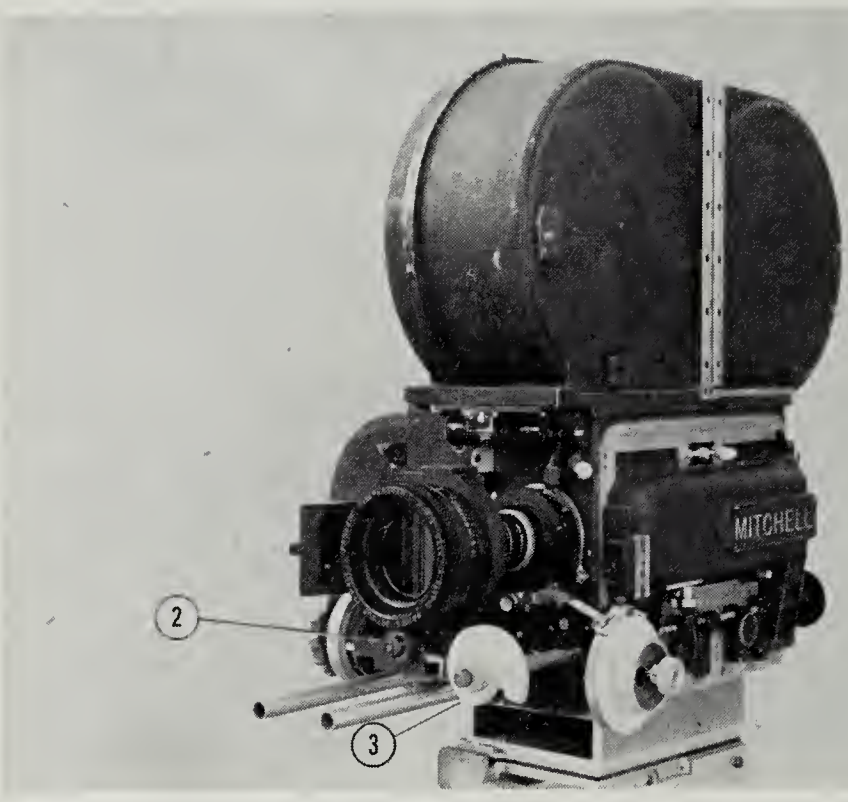
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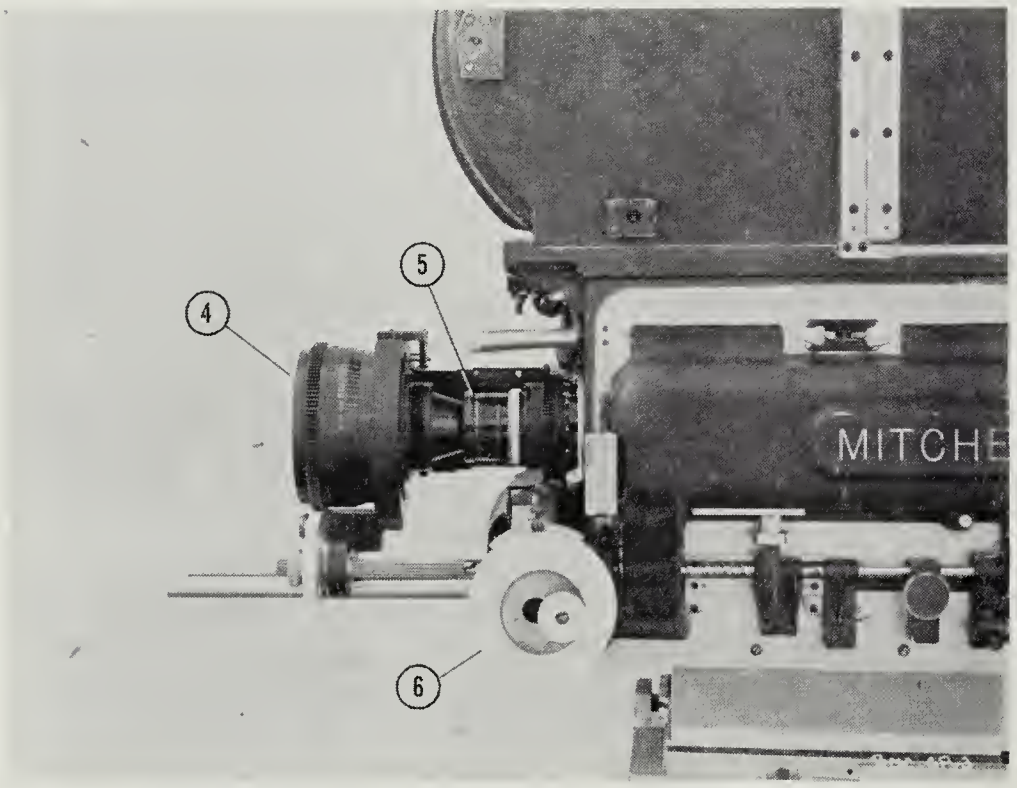
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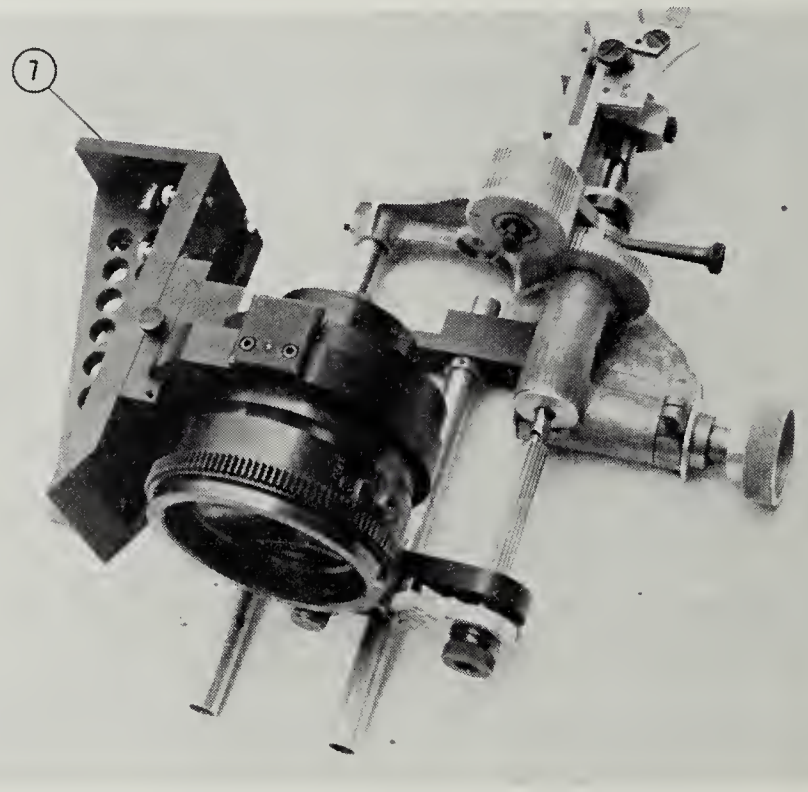
MITCHELL NC camera equipped with anamorphic lens and synchronous focusing attachment used in photographing Naturama wide-screen productions. A single knob controls focus of both lenses.



MITCHELL BNC camera similarly equipped. Cam (3) actuates rack and pinion gear (2) which engages ring gear of anamorphic lens, focusing it simultaneously with the camera lens.



SIDE VIEW showing Mitchell BNC setup. Anamorphic lens is shown at (4) and the camera lens at (5). Synchronous focusing of both lenses is achieved by one camera assistant operating knob (6).



ANAMORPHIC lens holder and gear train through which focusing rings on both the camera lens and anamorphic lens are actuated simultaneously. Quick demountable bracket is shown at (7).

Naturama — Republic's New Wide-Screen Process

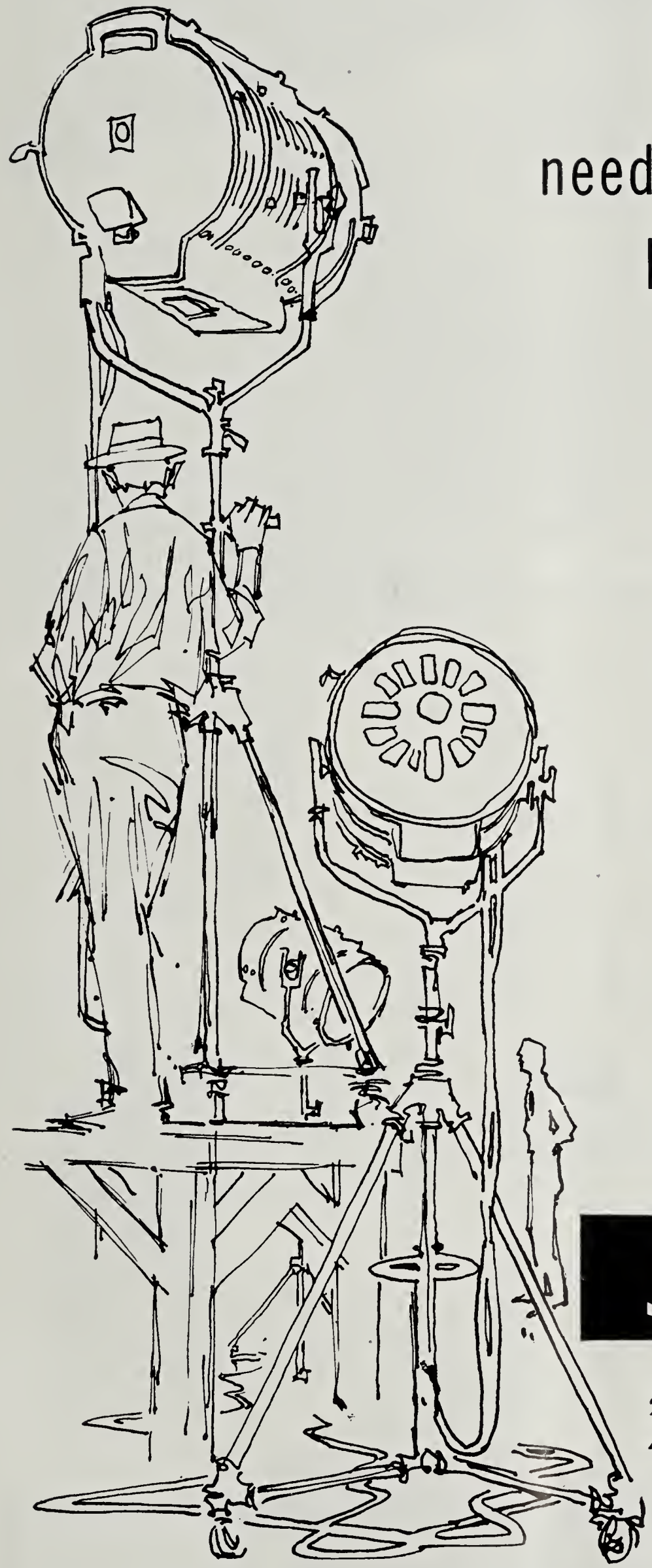
SINCE THE ADVENT of wide-screen motion pictures in 1952, *American Cinematographer* has endeavored to keep its readers informed of the details and method of operation of all wide-screen processes, following their introduction.

Early this year, Republic Pictures Corp. put into practical use its new wide-screen process. Said to eliminate practically all of the technical faults of wide-screen motion pictures from camera aspects to projection, the new system is trade-named Naturama.—*Editor.*

NATURAMA IS AN anamorphic wide-screen system with an aspect ratio of 2.35 to 1. An anamorphic attachment lens is employed in the photography, and is mechanically coupled to the camera lens to achieve simultaneous focus of both lenses.

Under the supervision of Republic Studio's President, Herbert J. Yates, and

(Continued on Page 690)



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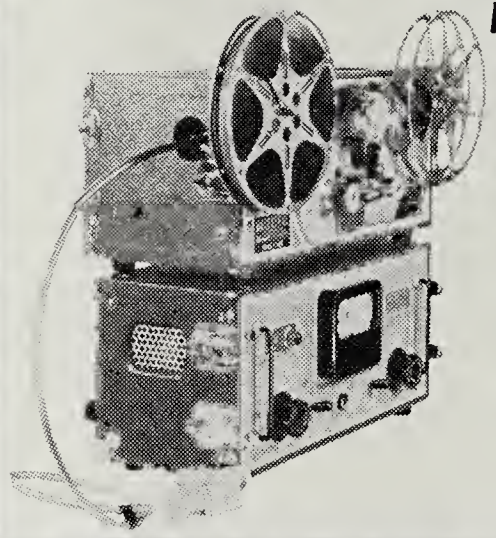
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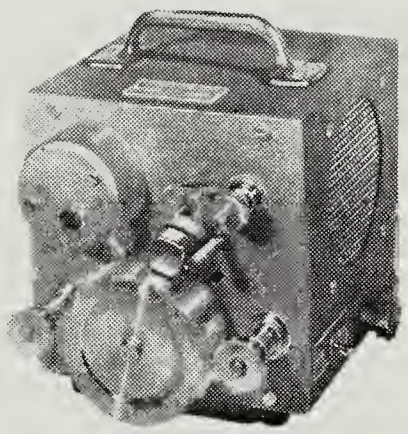


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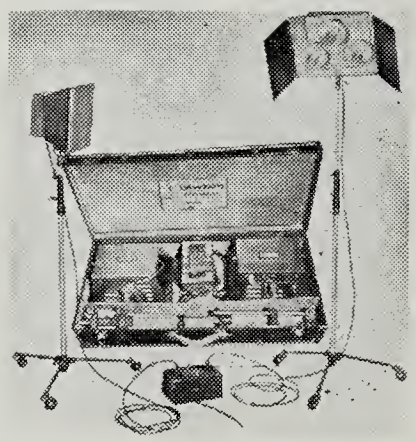
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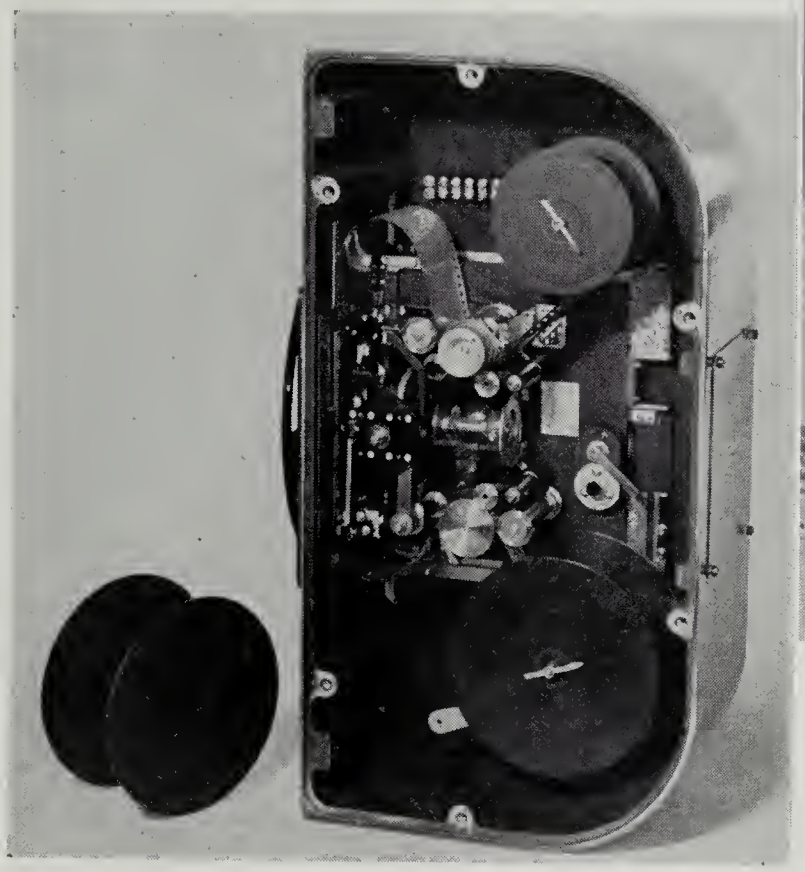
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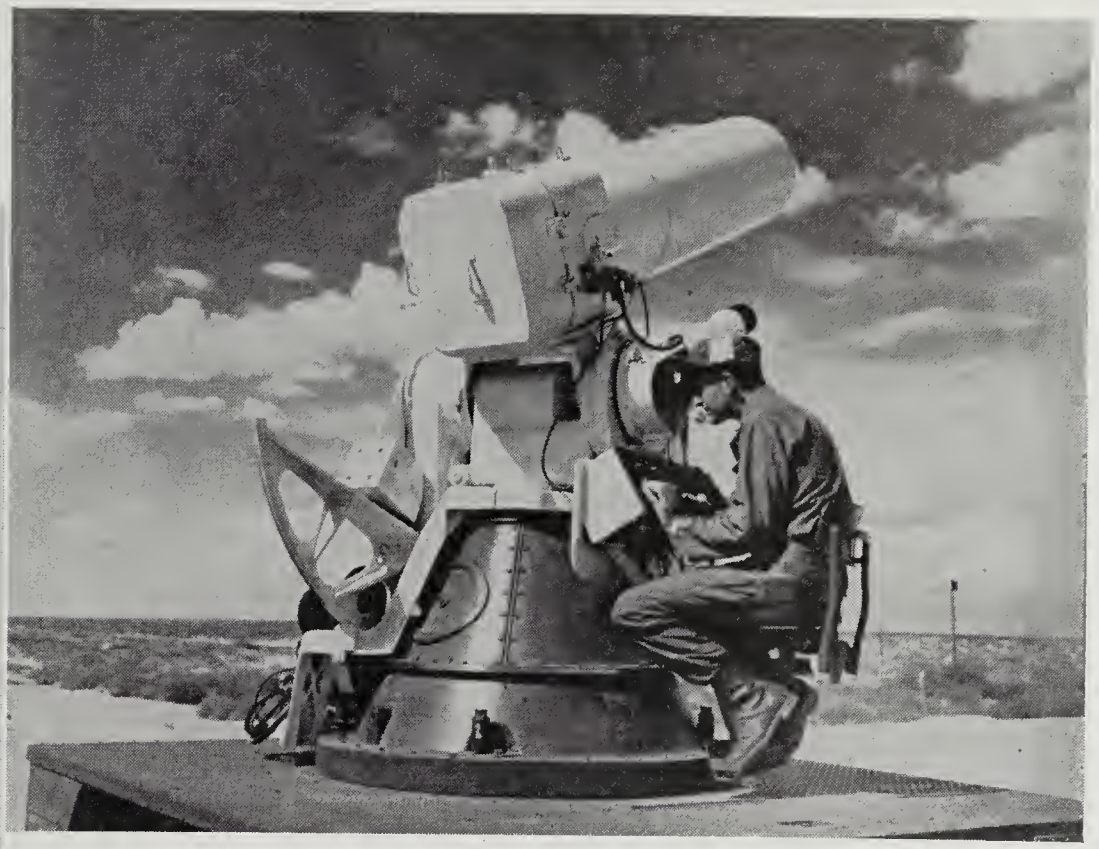
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GIANT TELESCOPIC TRACKER developed at Ft. Monmouth, N. J., for Army Signal Corps can trace a missile 300 miles away. Data is recorded by tracker's 70mm and 35mm cameras.

MAIN CAMERA built by Fairchild Camera & Instr. Corp., uses 70mm film to record tracker's field of view, and is keyed with 35mm data recording camera by timing signal.

Telescopic Tracker

The main camera uses 70mm film, the data camera 35mm film. Both are pulse-synchronized at approximately four frames per second.

A GIANT TELESCOPIC tracker capable of tracing a missile 300 miles away and which clearly shows fast moving aerial objects in natural color on the instrument's scope, has been developed at the Army Signal Corps Engineering Laboratories at Fort Monmouth, N. J.

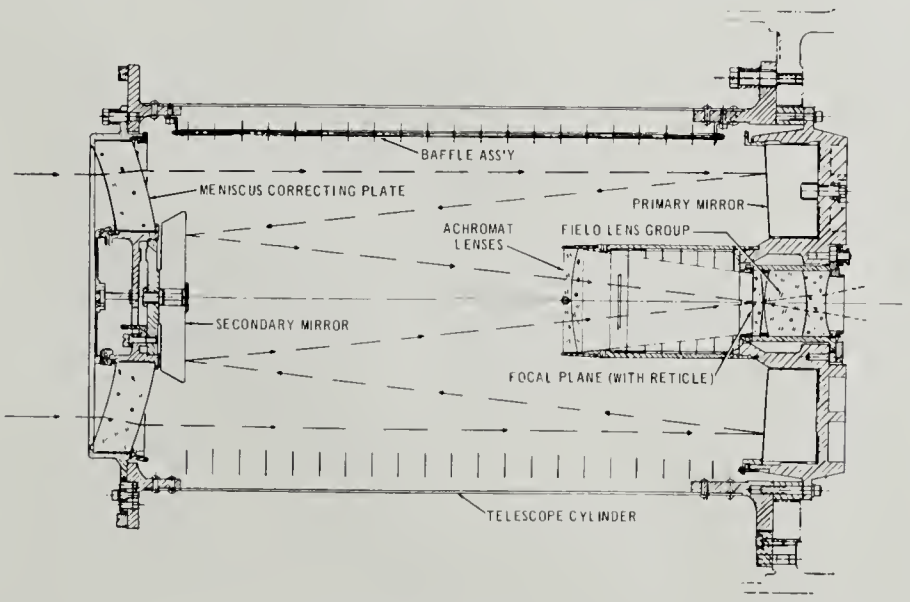
The new one-and-a-half ton optical collossus, which has a 400-pound lens system developed by Fairchild Camera and Instrument Corporation, takes black-and-white photographs of rockets, jets and other flying objects automatically. The new equipment, currently undergoing tests at White Sands, New Mexico has already made an impressive record.

Engineers have given the tracker a four-point record of achievement: good telephotographic lens and camera system, precise coordination of target and time records, reliable target acquisition and fast and accurate tracking.

Heart of the main optical system is a 40" focal length Cessegrain type of reflective optics. Important advantages of this type are high transmission of light, no chromatic aberration, reduced overall size which in itself is an important factor in tracking, and the use of large apertures with a relatively small opening. The optics, which were designed by the noted lens expert Dr. James G. Baker coordinating with Fairchild engineers, include a turret of projection lenses of 4X, 2X, 1X and ½X magnification providing effective focal lengths of 160", 80", 40" and 20" respectively. The entire field of view of this optical system varies from 1¾ to 5 degreees depending on the projection lens in use.

The camera, built and designed by Fairchild, has a capacity for recording up to 20 pictures per second, although most of the work has been done at

(Continued on Page 683)



TRACKER'S primary optical system designed by Dr. James G. Baker and built by Fairchild, uses mirrors as well as lenses to trace and photograph missiles.



RUGGEDNESS of war surplus 16mm Gun Camera was proven recently when it was mounted beneath chassis of an automobile to record at close range the car's wheel action. Footage provided key sequence in sales promotion film produced by Video Films, Detroit, for Monroe Auto Equipment Company. Camera was operated remotely by batteries.

Gun Camera In Unique Role

Mounted under auto chassis it records effect of faulty shock absorbers on tires and car performance.

THE GUN CAMERA, developed during World War II to record aerial combat activities, has found a multitude of post-war uses. One of the countless items made available by the government through "surplus" stores, the camera, which uses 16mm film in magazines, has served both professional and amateur film makers alike. Having a rugged, compact electric motor instead of the spring motor common with most ciné cameras, the Gun Camera has been adapted to many picture-making assignments requiring remote control.

One of the most interesting to come to attention is the recent application of the camera by Video Films, Detroit, Michigan, in recording action of wheels on automobiles and trucks having faulty shock absorbers.

As shown in the photo above, the Gun Camera was mounted on a special adjustable iron bracket bolted to the undercarriage of the vehicle and the lens focused on one of the vehicle's tires. In this way a remarkable film report was obtained showing how wheels behave on various road surfaces. The main purpose of the studies was to prove that good shock absorbers keep wheels down for better car control and braking ability. A typical wheel action is shown in the film clip reproduced at the right.

Because of car speed and vibration involved in the test runs, an extremely rugged mounting bracket had to be designed, despite the light weight of the camera itself.

Power for the camera's motor was supplied by 24-volt batteries and stopping and starting was controlled remotely from the driver's seat. Because the camera will operate at 32 and 64

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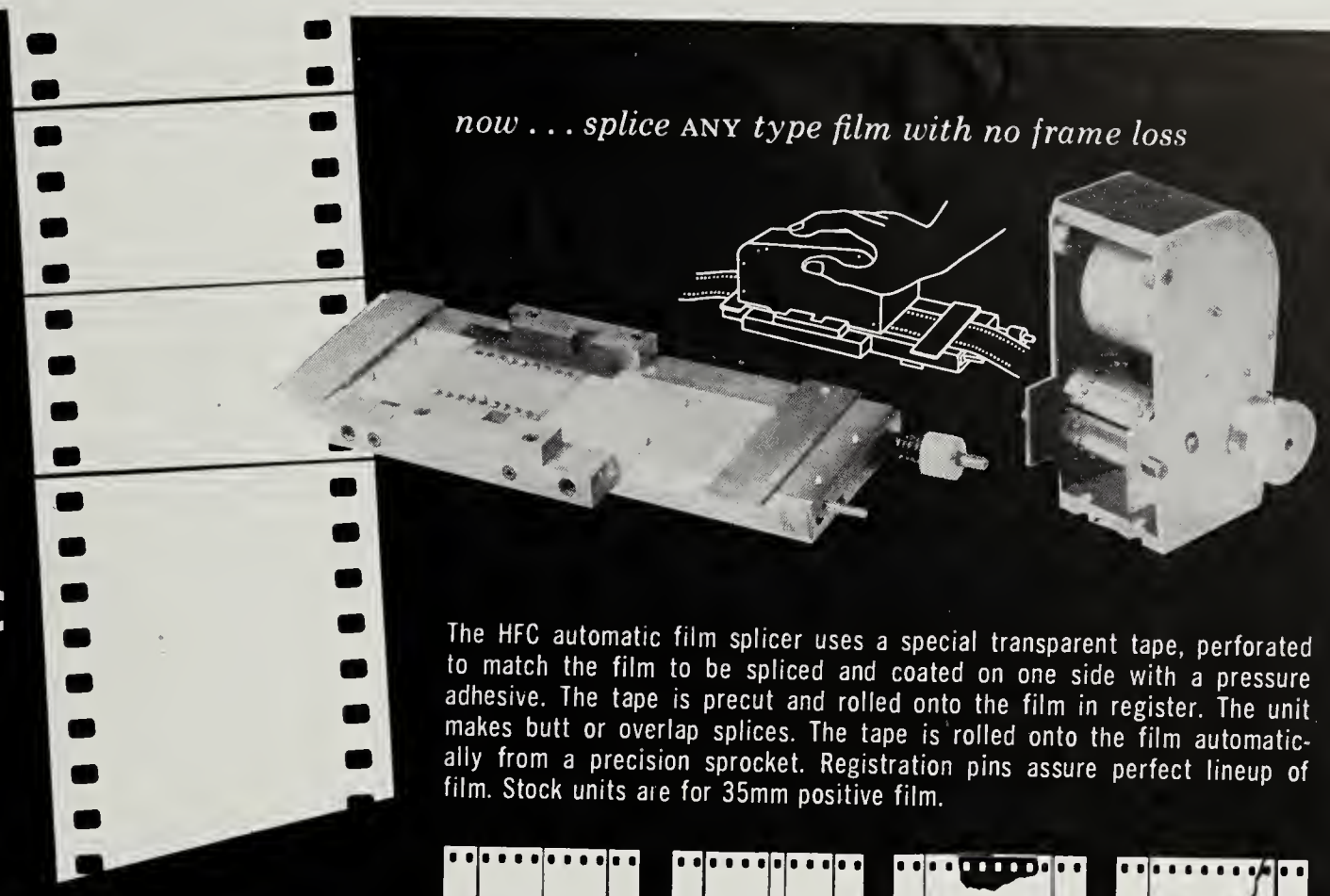


FILM CLIP from 16mm color shot made by Gun Camera, showing erratic action of automobile wheel on rough pavement as result of faulty shock absorbers.

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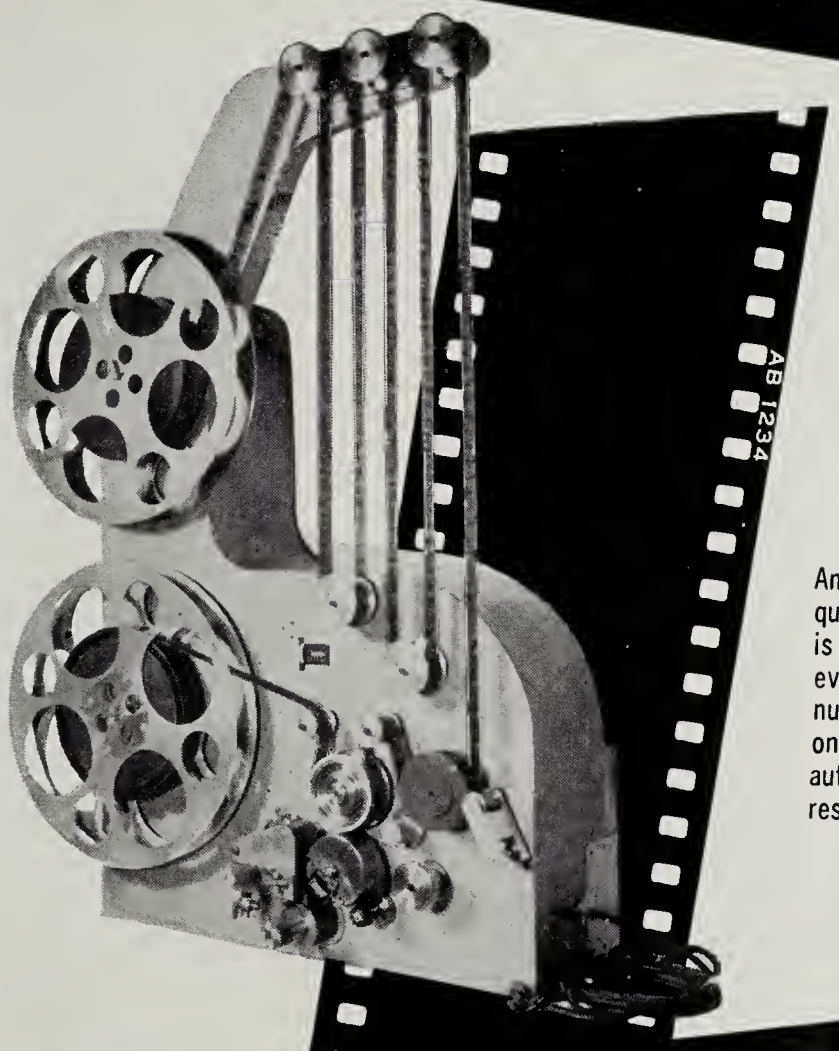


The HFC automatic film splicer uses a special transparent tape, perforated to match the film to be spliced and coated on one side with a pressure adhesive. The tape is precut and rolled onto the film in register. The unit makes butt or overlap splices. The tape is rolled onto the film automatically from a precision sprocket. Registration pins assure perfect lineup of film. Stock units are for 35mm positive film.



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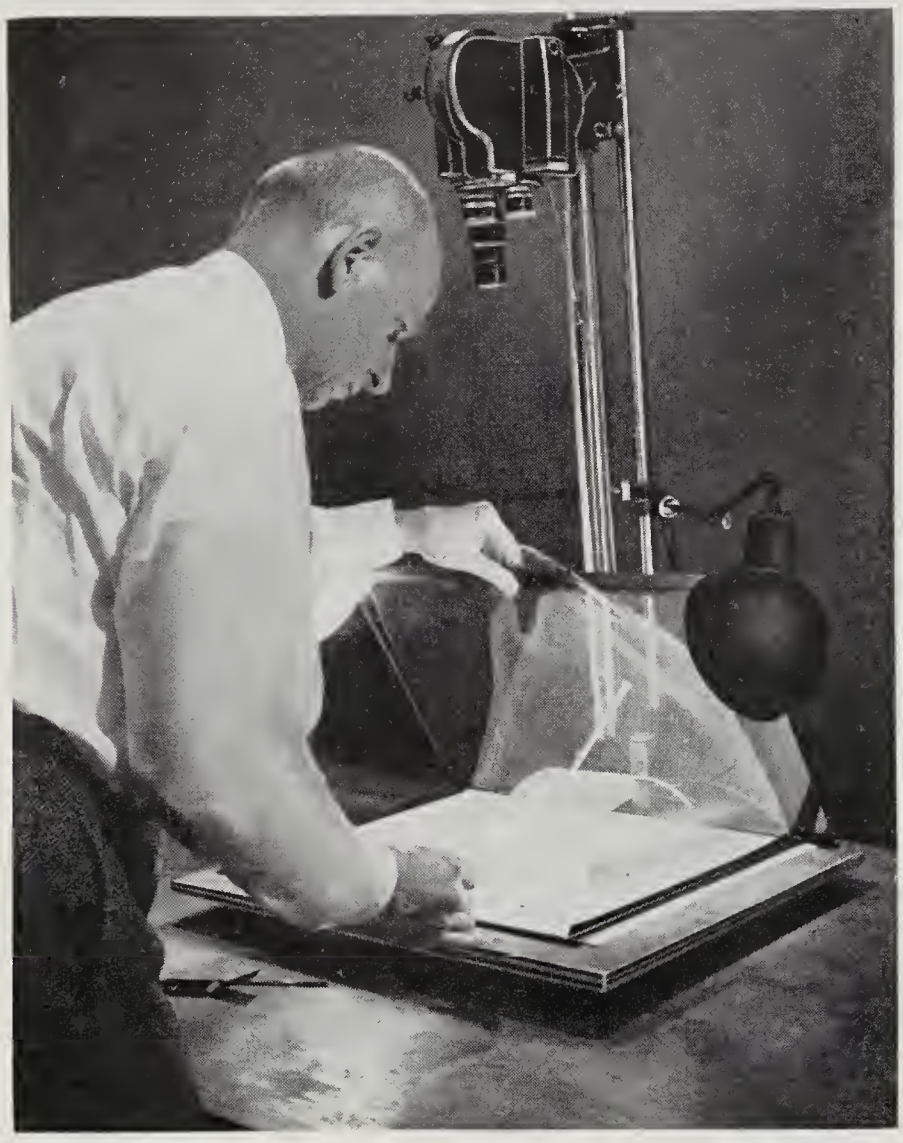


FIG. 1—Overlay cells are taped to edges of board to insure exact registration, and to permit them to be folded in and out (off and on the background drawing) as desired. Equipment used here is Bolex H-16 camera and Bolex title stand.

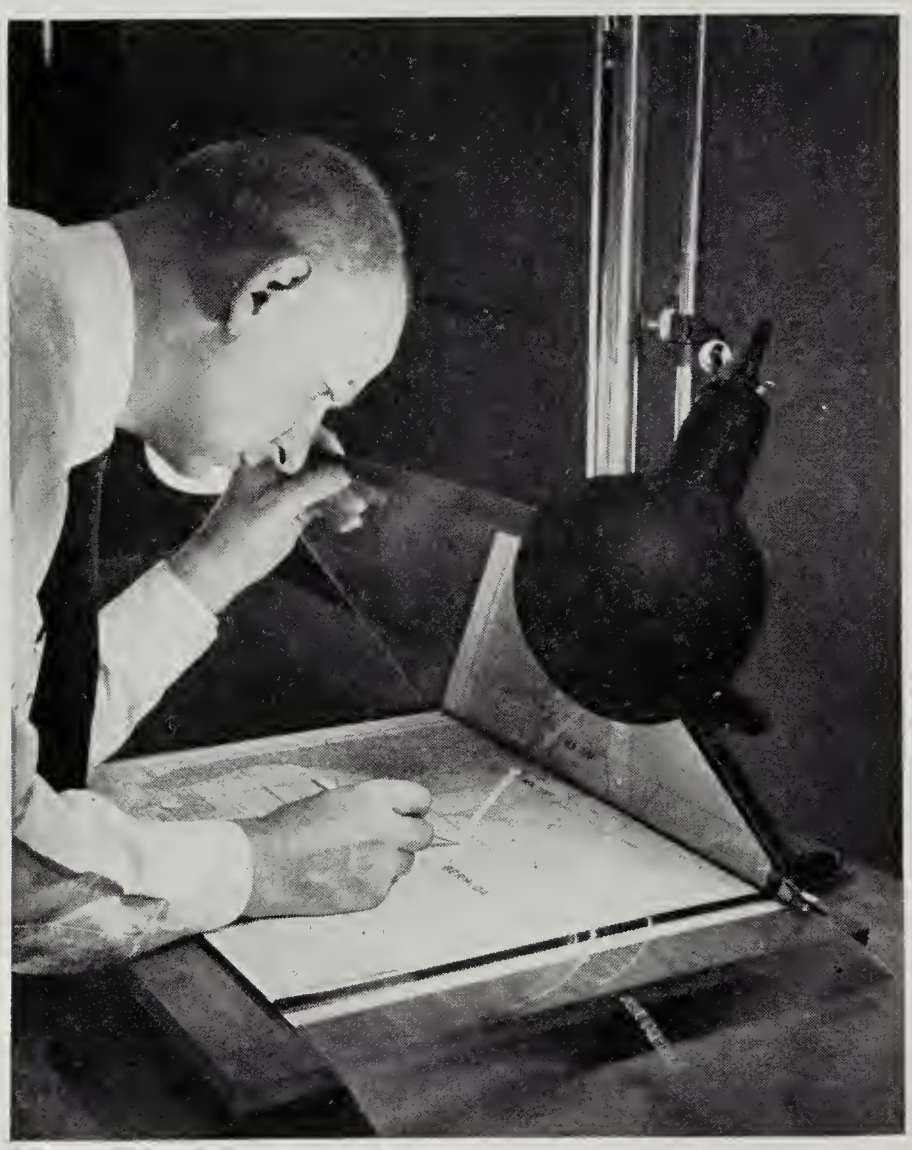


FIG. 2—Drawing the animated line. Route taken from New York to Bermuda was shown by animating line between two points on an overlay cell placed over map background in color.

Simple Animation Techniques

The amateur can enhance his movies with animated sequences easily filmed by following the simple techniques employed by many commercial film producers.

By PETER GIBBONS

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WHEN THE WORD ANIMATION is mentioned, almost the first thing that comes to mind is the animated cartoon. This form of movies is a medium which uses a series of drawings, sometimes thousands of them, each one painted on a separate sheet of material. It is a very specialized process and requires many and varying talents. To make even the simplest animated film would take one person a year or two, if not longer.

However, there is a simpler type of animation which anyone can use in his film to add variety, clarity and interest. This is the kind of animation used in commercial films to illustrate principles and processes which cannot easily be pictured or explained in straight "live" photography. Such animation can be used effectively not only to show how something is done or how one thing compares with another, but also to set locations—on a map for instance

—for a story, an event or an incident, and to show progress from place to place or from point to point.

Before discussing ways in which you can make use of this simple but effective type of animation, let us look at some of the terms most frequently used in the process. These definitions are for animation and may differ slightly from definitions used for straight "live" movie making:

Background: The base upon or against which other things will move or animate.

Overlay: A picture drawn on a separate piece of transparent material, which goes over the background; it may be a stationary picture, such as a house; or it may contain animation, such as smoke rising from a chimney.

Cell: A sheet of cellulose acetate used in animation (because of its transparency) on which is painted or drawn art work to be photographed.

Fadein: To bring a picture gradually onto the film from total darkness to full brilliance. This should be done only at the beginning of a scene.

Dissolve In: To bring one item, such as an arrow or a line, gradually onto the film while the background remains the same.

Highlight: A white line around an item, for example the name of a city in the film for the purpose of emphasizing it.

Pop In: To bring something onto the film suddenly, so that it appears to "pop in" from nowhere. *Pop out* is just the opposite.

Scratch Off: A technique used in animation to make lines travel from one point to another, such as a route travelled from one city to another.

In animation, the picture is made by exposing one frame (picture) at a time. After the first frame is exposed, the subject is moved very slightly; then the second frame is exposed and the subject is moved a little more. This is done for hundreds and hundreds of frames so that when the film is projected at normal speed the 'actor' or object moves across the screen in a smooth, realistic fashion—that is, if enough time and

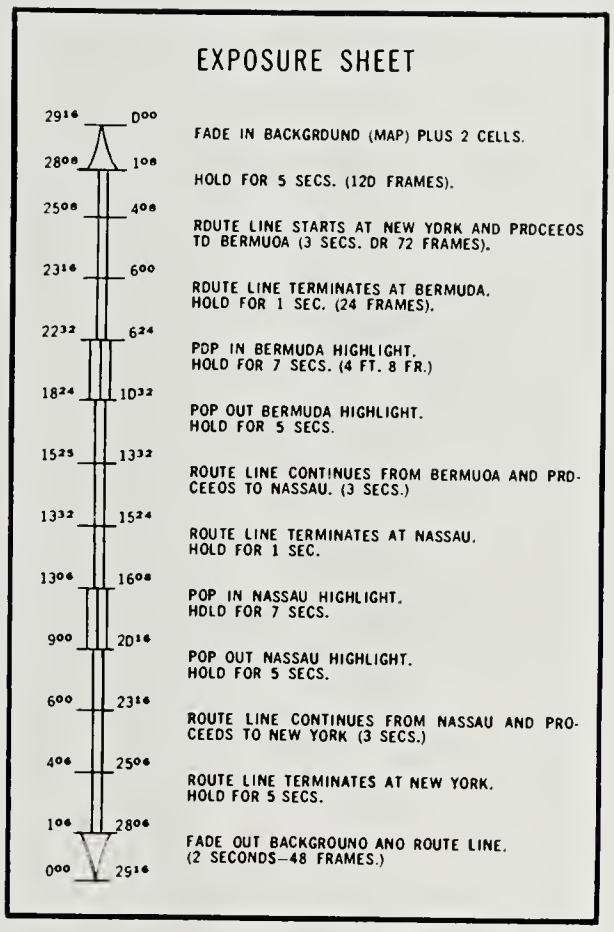


FIG. 3—Typical exposure sheet compiled for animation sequence suggested in author's text. It consists of symbols and vertical lines representing the action, where it takes place, and the amount of time (in frames of film) that it lasts.

effort and patience has been exercised to do a good job. Unsteadiness and jumpy action can be very disconcerting, and will detract from the effect of the picture rather than add to it.

Cartoons are made by drawing the actor on a different cell for each slight advance in position, and changing these cells against the background for each exposure. It is necessary to re-draw for each exposure because of changes in position and the movement of arms and legs. Simpler animated pictures can be made by moving the object itself against the background. Our subjects here will be lines, arrows, letters, and numbers and all we will have to do will be to change their positions against a fixed background. Our kind of animation will differ in another way, too, in that most of it will be shot backwards. Don't protest right away that your camera will not *run* backwards. You can use the old trick of turning the camera upside down when you shoot, and reversing the film when splicing it into the finished picture. Remember to use only double perforated film in your Bolex H-16 so that it will have proper sprockets when reversed to pass through your projector.

Why shoot backwards? The answer is very simple . . . it is easier to get the effects you want that way. Almost invariably in this method of movie making, objects come gradually into the picture; lines showing routes from one city to the other, arrows pointing out items to be emphasized, or numbers indicating the sequence in which things are to be done. If the work were shot *forward* it would be a difficult and tedious job to put in numbers or arrows in perfect alignment while the background was under the camera. If a route was to be traced from one city to another

(Continued on Page 683)

Amateur Film Festival

"Amateur Film Festival," the title of a proposed television program produced by Laurence Schwab, who is currently directing NBC's "Matinee Theatre" in Hollywood, will offer the television audience an opportunity to recognize the talents of the amateur film maker in a new and unexplored manner.

Too often it is assumed that home movies record only travels, birthdays, weddings, and children of the family, and therefore are limited to a small personal audience of family and friends. The Amateur Film Festival intends to disprove this view by showing to the public the creative work to be found in the amateur film field. Technically, the amateur has much to learn from the professional regarding cameras, lights, makeup and the myriad of specialized details, which make up a modern film production. However in the conception department the amateur could easily teach the professional a few tricks inasmuch as the amateur is not restricted by commercial film requirements and is left free to seek whichever channel suits his mood. This flexibility, plus the lack of technical equipment and "know how," has led to the production by amateurs of numerous films of avant-grade quality. Mr. Schwab feels that television will show off these films to best advantage and to the greatest audience for the amateur field.

The format of the program will be the presentation of amateur films to a selected panel for discussion and review. This moderated panel will consist of qualified professional members, such as film directors, cameramen, editors, film stars, and others from the film industry whose constructive criticism will aid the amateur whose film is on view, as well as those who are watching and are, or intend to be,

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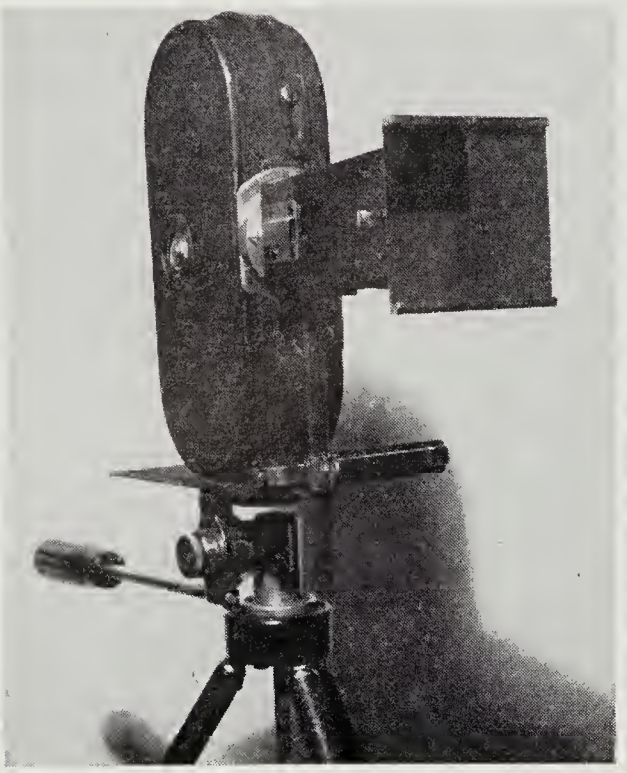


FIG. 1—Simple homemade matte box is mounted on bracket locked between camera base and tripod head; ¼-opening matte is shown in place in holder.



FIG. 2—Arrow points to piece of masking tape used to mask off ½ of aperture behind lens—ideal method where cine camera provides removal of lens.

Action Montages For The Amateur

By JAMES R. OSWALD

THE ART OF MAKING montages is certainly not a new one insofar as the ardent still photographer is concerned, but when it comes to movie making, other than professional, it constitutes a field little explored, even by the more advanced amateur. Perhaps it is because these intriguing effects are usually thought of as requiring rather involved and expensive laboratory procedure that many amateurs shy away from an attempt at montage-making.

It is surprising what can be accomplished with limited equipment in this realm of movie making, provided that the necessary patience and perseverance exists to see an exacting job through to a successful conclusion. Since making action montages is somewhat of a challenge to the skill of the cameraman, it is obviously an undertaking for the experienced filmer, or at least one with serious photographic inclinations, if the outcome is to be satisfactory.

Just what is a *montage* and what is its purpose? A good way to describe a montage is to define it as a sort of composite picture in which two or more (usually several), separate and distinct images appear together in one over-all scene. This means, of course, that each of the individual components uniting to comprise the completed montage is entire in itself, and as such can possess a pictorial entity all its own, consequently filling the screen with an array of multiple action in the same area normally occupied by the conventional picture. Thus, in a unique way the enterprising ciné amateur may depict a series of events supposedly occurring simultaneously; present a long shot and a close-up of a subject in a single view; or portray a person's diverse moods or expressions. Montages also afford an effective means of contrasting the city with the country, or contrasting various modes of living; to summarize vacation highlights at a glance; or, in short, for any situation where it is found advantageous to picture a group of scenes as a unit. Other possibilities will suggest themselves according to the filmer's ingenuity.

There are two fundamental methods the amateur movie maker can employ in making action montages. The principle behind either is identical in that a way must be devised to permit only a preselected portion of each film frame to be exposed at a time, while the balance is kept preserved for segments of the montage to be photographed later. The simpler, though perhaps more limited, procedure for attaining this end is merely to mask a part of the camera aperture with tape at a point directly in back of the lens, as shown in Fig 2. This method has among its shortcomings the fact that the reader's camera may not provide for easy access to the aperture. To attempt similar masking of the lens itself is impractical and may lead to complications, besides.

The alternate, and probably more ver-

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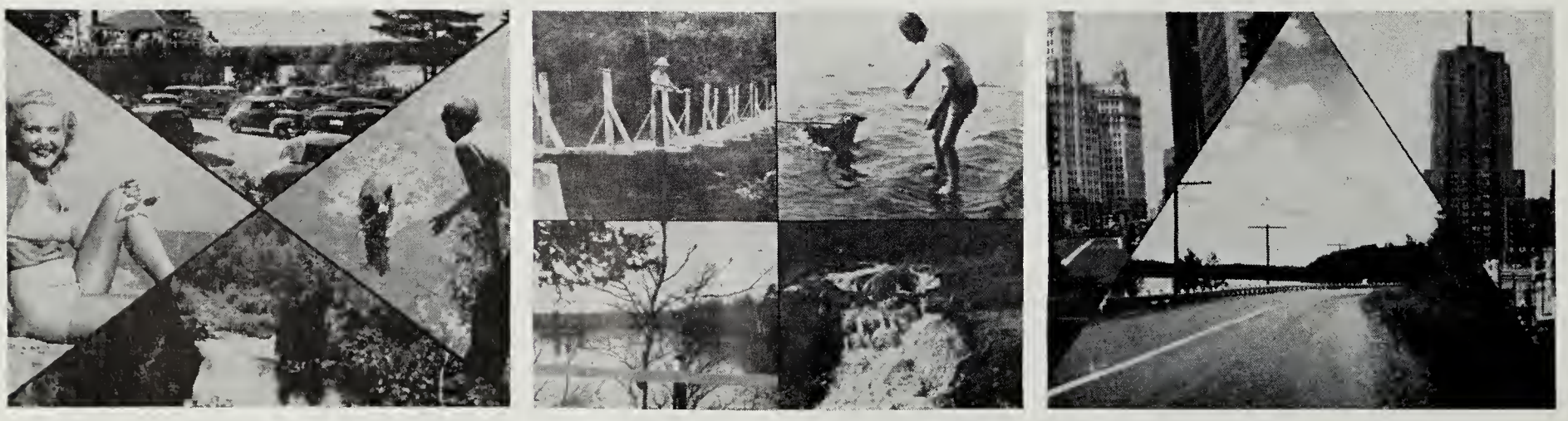


FIG. 3—Examples of three montage patterns that may be accomplished with the average cine camera, using methods set forth by author Oswald in the accompanying article. In all cases, each exposure should be uniform with the rest.

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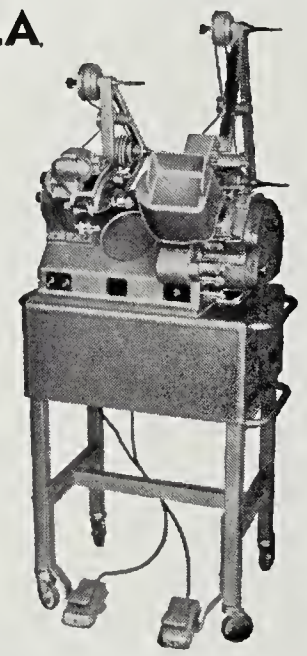
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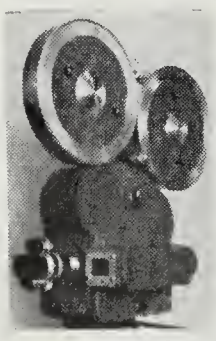
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ACTION MONTAGES

(Continued from Page 676)

satile, method than can bc utilized by the amateur in making action montages incorporates an auxiliary piece of equipment known as a *matte box*. This is essentially a box-like contrivance mounted in front of the camera, as shown in Fig. 1. With the exception of a circular hole in one end, through which the lens protrudes, and an open end opposite, the proportion of a film framc, the device is closed on the sides and its inner surfaces finished a dull black, to minimize the possibility of stray reflections impairing the picture. Joined with the camera, its center axis in perfect alignment with that of the lens, the matte box acts to hold, at a fixed distance from the film plane, different shaped *mattes*, or masks, which, of course, serve to withhold registration of one portion of the montage scene while another is being photographed. The box proper, which may be built of plywood or metal should be rigidly supported on the tripod with the camera by means of a bracket, similar to the one shown in the photo. The masks, fashioned from stiff cardboard or thin metal and cut to the shape and size required, are readily interchangeable and positioned by sliding into grooves or slots paralleling the top and bottom of the front of the matte box. Keying symbols will aid in precise placement of the masks.

Sometimes a matte box is of a tapering design, as that illustrated, an optional feature in its construction. Irrespective of style, exact dimensions are not of special significance, and are largely an item for individual consideration. What is always of great importance, however, is that the opposing walls of the device be sufficiently apart from cach other to avoid lopping off the scene, no matter what the focal length of the lens employed. Stated solely for purposes of guidance, and not for patterning after as an all-around version, the unit shown measures approximately 5¼″ long, the end holding the masks 3″ square, which tapers to the camera end, 1¾″ square, its circular inner opcning ample to envelope any lens with which the accessory is used. The boxy lines of this particular model enable it to be used with certain still cameras, also.

Up to this point no reference has been made to the manner of back-winding thc film, a necessary operation in making the series of exposures that form the composite image in an action montage. Since by far the vast majority of home movie cameras have no provision for back-winding, substitute means are indicated.

Having photographed the first segmcnt of the montage, giving careful note to the readings on the regular footage gauge at the start and conclusion of the scene, one substitute way of winding back the exposed film is to resort to the darkroom procedure. Here, the film is removcd from the camera, wound back to the beginning of the sequence manually, and rethreaded, in preparation for shooting the next stage of the montage. If the camera is of the magazine-loading type, the magazine must be dismantled in order to backwind the film, an operation the writer strongly urges mastering beforehand with a discard. Roll or magazine, the respective process is then repeated as each part of the montage is filmed, until completed.

Not an absolute requirement, in certain instances it may be advisable to adopt a coding system, to facilitate starting off subsequently-photographed montage proportions on the same film frame as the original. With such a system, prior to making the initial exposure for the multiple image, a small identifying notch is cut or punched in the edge of the film in the darkroom. The notch affords a finger tip method of matching the complementary scenes to their allocated film section. More exact than relying on the conventional footage calculator for this purpose, the practice is especially beneficial in making a montage the worth of which depends on split-second coordination of the allied bits of motion.

Notching the film, if properly executed, does not harm the picture or hamper its projection. To cue the finish of a montage sequence in like fashion, however, is neither practical nor important. Inasmuch as such coding is not manifested outwardly, and because any excess of film frames to those common to all parts of the montage can be eliminated through editing, the usual means for measuring scene length may be resorted to, as when the notching system is not employed. There is a manner, though, of acquiring the more equalized termination of the montage components than by the customary footage computer way, and that is with the assistance of an ordinary timepiece containing a second hand, or better still, with a stop watch.

The user of a roll-film loading camera, or 8mm magazine type, has at his disposal another, perhaps preferred, method of repositioning the film for photographing each segment of the montage. No darkroom technique is required as in the previous method. The system may be considered by some too indirect a way of attaining the necessary end to be of interest. Nevertheless, to enable the reader to make his own decision in the matter, the procedure is herewith explained: After a section of

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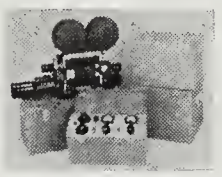
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the montage has been exposed, the lens is capped, and the entire remainder of the film run through the camera. This accomplished, the reels are interchanged, or the magazine turned over, as the case may be, and the film completely rewound. Then, with the reel switch (or magazine turnover) process repeated, the film is allowed to proceed to the start of the montage sequence, in readiness for shooting the next portion upon uncovering the lens. As before, the operation is duplicated as each segment is exposed, until the montage is fully composed. Since there is no need for recourse to the darkroom in these steps, the notch system of coding is not applicable here.

In any circumstance where exposure is restricted to a section of the film frame at a time, it naturally follows that, in sighting through the viewfinder, compensation must be made accordingly. because a lens always inverts the image on the film, when a montage is being photographed by the direct masking of the camera aperture, the blocking off of this opening must not only conform with the viewfinder composition, but also with the transposed picture. Matte box masking intercepts the image prior to reaching the lens, hence the transpositional aspect of this optical law is of no concern in such a situation. Viewfinder compensation still applies, however.

Regardless of the method pursued in making action montages, the technique offiers the enterprising cameraman an opportunity for original expression in a novel manner. But like other intriguing motion picture effects, montages shou be used sparingly, and with discr if their fascination is to be main and their existence justified. Ar somewhat of a challenge e filmer of considerable ex amateur, too, with lim may well broaden h horizons with these renditions decided'

CIN owed, con- to work in believed to be n picture set ever e — the gates and an meses, through which es—about fifteen miles d it was here that Griggs tographic crew of nineteen to set up the VistaVision and photograph some of the st mass action ever staged for a ion picture.

Initial shooting on the picture began on the slopes of Mt. Sinai where the production group that included DeMille, Charlton Heston, who portrays Moses, Griggs, and a picked crew of technicians followed the very path taken by Moses, as described in Exodus, and made scenes in the actual places on Mt. Sinai where Moses saw the Burning Bush and heard the Voice of God.

This first location site was also the toughest of the entire picture. It was tough to reach and tough to work in—about half way up the steep 8,000-ft. mountainside. When the camels, carrying the cameras and associated equipment could go no further, the equipment was unloaded, broken down into the smallest possible units, and carried the rest of the way by laborers and members of the camera crew. The entire company lived for ten days at St. Cat' erine's Monastery, 5th Century sh and oldest Christian edifice in c ous use, on a slope of the Hol'

Here, at this near-inacce tion, Griggs worke with his generator and boos relied on sunlight ref red fill and booster li situ- enacted high on now the Space does Mitchell- here the prod had arrived at all the l , where they major a ked and tested around the Paramount ated staff. last meras, the scores of nd the power generator, most important piece of made available to Griggs was ize $50.000 Chapman camera built by Chapman Studio Equip. North Hollywood, especially for production.

Some idea of the size and scope of operation of this crane may be seen from the following statistics: Length, 18 feet; width, 7½ feet; minimum height, 9 feet; wheelbase, 13 feet; tread 6 feet. Maximum height obtainable, with crane fully elevated 28 feet—lens to ground. The boom rotates a full 360°.

Both a gasoline engine and an electric motor drive are included, and are designed to operate either singly or together. The gas motor is intended for use in propelling the crane on land or on highways, while the electric drive serves for moving the crane on the sound stage or where the gas motor cannot be used because of its exhaust. It was from this crane that most of the spectacular shots of the Exodus, the

The incomporoble cost of "The Ten Commondments" comprises besides Charlton Heston who portroys Moses, Yul Brynner, os Phorooh Romeses Ii; Anne Boxter, Edword G. Robinson, Yvonne De Corlo, Debro Poget, John Derek, Sir Cedric Hordwicke, Nino Foch, Mortho Scott, Judith Anderson, Vincent Price, John Corrodine, Henry Wilcoxson, Olive Deering, Dougloss Dumbrille, Donold Curtis, Julio Foye, Ion Keith ond mony others, including well-known DeMille veterons.

pursuit by the chariots, and some phases of the parting of the Red Sea action were filmed.

Only the VistaVision cameras with their double-frame aspect ratios could properly capture the full scope and majesty of the largest set, the gates and city walls of Per-Rameses, which stretched across the desert a full quarter mile, with two huge pylons, each 107 feet in height, flanking the gate proper. For the Exodus sequence, at least 12,000 people—actors and extras—and 15,000 animals — oxen, sheep, camels, goats, poultry, etc.—took part.

In filming the Exodus sequence, all four VistaVision cameras were employed. Griggs' camera, mounted on the huge Chapman crane, was the key camera. Director DeMille mounted one of the crane's three seats and directed the vast action by publie address system and by shortwave radio. Griggs was equipped with an inventory of 6 lenses, all of which had been re-calibrated and carefully matched to insure uniform results. They were: 28mm, 35mm, 40mm, 50mm, 75mm, and 4-inch telephoto. The 28, 35, and 50 millimeter lenses were Leica lenses, specially adapted for the Vista-Vision cameras, and were his "pets," as he says. "The result achieved in clarity, depth and resolution with these lenses," he added, "is simply unparalleled." Practically every lens mentioned above was used by Griggs at one time or another in filming scenes of the Exodus. The other three VistaVision cameras, stationed at strategic points along the line of the Exodus march, used virtually the same lenses throughout as their scope of coverage had been pretty much defined in advance.

Some idea of the great vistas covered with the VistaVision cameras, Griggs points out, is the fact that the Exodus action ultimately stretched out over three miles in extent and was entirely covered, both in width and depth, by the VV camera lenses.

In shooting the Exodus scenes, said Griggs, the light was never a controlling factor. It was the people, the animals, and all the things incidental to the action; the cameras were invariably waiting on them. Usually the company assembled early in the morning and started shooting, and kept on shooting—rolling the cameras just as fast as each scene could be made ready. Where retakes were necessary, the crowds of people, animals, etc., had to be moved back to their respective starting places, and everything checked to make sure that each start was uniform in composition and checked out insofar as continuity was concerned.

"The Ten Commandments" mobilized the greatest number of extra people ever used in a motion picture. For scenes of the Exodus, extras were not hired by the individual but by whole tribes, along with their animals, their goods and chattels. Additionally, buses called each morning at the Cairo synagogues to transport workers to the set. DeMille found it inspiring that in these scenes Jews, Christians and Moslems worked side by side in complete harmony to help bring to the screen the story of Moses, revered in all three of their respective faiths.

In Egypt, Loyal Griggs and John Fulton, director of Special Photo Photographic Effects, worked closely together whenever there were scenes to film that later would receive Fulton's additional special effects treatment—such as the later Exodus scenes, where the skies become overcast with billowing, dark, ominous clouds (superimposed later by Fulton and his staff). In these scenes, it was necessary to change the aspect of the daylight so that it would appear as though the sky was actually overcast—although Griggs shot these scenes in full sunlight. Here, he used a special graduated neutral density filter, which altered the aspect of the lower part of the scene but left the sky area (which would have the clouds superimposed later) entirely normal.

In still other scenes in which Mt. Sinai was shown erupting in a halo of red fire—an effect introduced into the scenes subsequently by Fulton—Griggs gave thc scenes the proper touch of red by projecting red light into them, which would make it appear in the completely processed scene as though the scene was aglow from the red flames emerging from Mt. Sinai. These scenes, of course, were also filmed in bright sunlight.

The film product of the VistaVision cameras was shipped to Hollywood daily from Cairo, was processed by the Technicolor laboratory in Hollywood, and prints returned by air. Thus, "dailies" or "rushes" were available on an average of four times per week. They were screened for Mr. DeMille, Loyal Griggs, and others of thc production company in a theatre in Cairo, or at location headquarters, which were situated in one of the Egyptian film studios in Cairo.

A truck equipped with refrigeration



We clean up...



was used to transport and store all negative during the overseas location shooting of "Commandments." The The truck was specially built for the purpose and was equipped with precise controls that maintained even temperature in the film storage vaults, regardless of the prevailing natural temperatures. At the Mt. Sinai location, the most distant of all from Cairo, the truck would leave for Cairo at the close of each day's shooting; it was a ten-hour drive—and required from 12 to 15 hours to complete the return, uphill journey.

In making air-shipment of the negative to the U. S., the film was carefully packed in dry ice and put on a TWA plane, which left Cairo early each morning and arrived in New York the following morning; the film was transhipped from there to Hollywood, where it arrived the same night.

The intense heat that prevailed daily in Egypt along with the ever-present dust posed a maintenance problem for the camera crew—a contingency that was anticipated well in advance. The studio sent along an expert camera maintenance crew which inspected, cleaned and carefully adjusted each of the four VistaVision cameras at the end of each day's use. When dust storms prevailed or whenever scene action created an excessive dust problem, large cellophane envelopes with a narrow slit cut for the lens, were slipped over the cameras and tied at the bottom as a means of keeping dust from reaching the delicate film movement and the polished steel film gates.

Not all of the production, of course, was photographed in Egypt. Following the nearly three months of shooting in Egypt and the Sinai Peninsula, there followed 117 days of shooting in Hollywood—said to be the longest shooting period in industry history. During this time, the entire Paramount studio was taxed to capacity to provide space for sets for "The Ten Commandments." To film one phase of the sequence depicting the parting of the Red Sea, it required a temporary physical union of two giant movie lots in Hollywood in order to provide the necessary area needed by DeMille in staging the action. Thus, fences between the RKO and Paramount lots were torn down, and construction started which required the use of nearly 30,000 cubic feet of concrete.

Indoors on the sound stages, Griggs found a new tool awaiting him which had been undergoing development during the period he was shooting in Egypt. This was National Carbon Company's yellow-flame carbon which has since proven such a boon to photography with Eastman Color negative. These

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new carbon arcs enabled Griggs to obtain a new richness in the rendition of the highly colorful and intricately designed sets, props and costumes which are among the outstanding features of "The Ten Commandments."

After Griggs and his crew had shot the last scene on the sound stage, and the crews, cast, and all pertinent technicians dismissed, there was still a major part of the picture yet to be completed. This was the concluding phase of the Special Photographic Effects work, some of which has already been referred to above.

This phase of the production was a major undertaking in itself—said to be the largest ever involved in a Hollywood motion picture—and worthy of a story all its own. (Which we plan for an early issue.—ED.).

TELESCOPIC TRACKER

(Continued from Page 671)

4 pps. To provide accurate film record of target information, almost perfect frame to frame film registration has been achieved, even at the 20 pps speed.

Angular data obtained from the precision scales is also recorded photographically. The main camera photographs the target and records the reading of a clock on the same frame. An auxiliary camera photographs a data display unit which indicates the orientation of the pedestal in elevation and in azimuth. It also mounts a second clock which is synchronized with the first. Additional fine and coarse servo-driven position indicators may be connected through data transmission cables.

The main camera uses 70mm film, the data 35mm film. Both are pulse-synchronized at approximately four frames a second. Both cameras are put in operation a few seconds before test time, so they are running at constant speed at zero time. The 70mm film shows photographs of the main camera's field of view only, while the 35mm film will remain blank.

The first firing range pulse, marking on target time, will activate a holding relay which supplies power through a micro switch synchronized with shutter opening, thus operating flashing lamps illuminating the data dias and both clocks, and also a neon lamp arranged to produce a reference mark on the 70mm film. Another reference mark on this film is produced by a neon lamp arranged to operate directly from and in synchronism with the first range pulse.

Both of these marks are applied to the film ahead of the loop where the film motion is steady and continuous. The spacing between the two marks is thus an exact measure of the elapsed time between the missile lift and the initial clock photograph.

This high degree of accuracy means that the film will reveal information not only as to type of object, but also that will determine its velocity, its rate of acceleration, its elevation and its azimuth. That, with radar range information, will give a precise location of the missile at any point in time.

Fast and accurate tracking is obtained manually by "crystal ball" control of a servo system. This device, used for several years in anti-aircraft controls eliminates the free slewing method and the method of hand turned elevation and azimuth wheels. This latter method often required a two-man team. In actuality, the operator or tracker moves the "crystal ball" so that the image of the target, seen through the tracking telescope, remains centered on crosshairs. A seat for the operator is mounted on the pedestal and rides with it.

In addition to manual input orientation by the "crystal ball" method, a synchro-system can also be employed to orient the tracker on the basis of data received through a data transmission system or from radar. For example, an object beyond the telescope's range, could be picked up on radar which in turn would position the tracking telescope on the object even before the object was visible to the operator.

Self-contained in the platform of the tracker are the motor drives and controls necessary to move the scope into position. On top of this is a large pedestal consisting of a base section fixed to the platform and a head section or trunnion mounting. The trunnion mounting also built by Fairchild holds the entire optical system and provides it with movability through two axes.

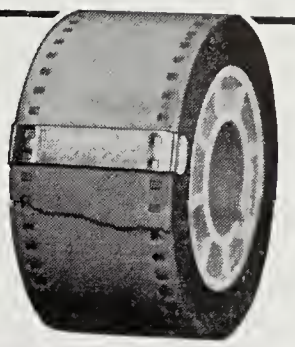
ANIMATION TECHNIQUES

(Continued from Page 675)

the line would have to be put in a bit at a time and a very untidy job would result. The real advantage of shooting backwards will be seen when we get into the work itself.

Let us suppose we are doing a travel film and we want to add a professional touch to it. With animation we can make an insert and show on a map where our trip took us. The trip is a triangle cruise from New York to Bermuda and thence to Nassau and back to New York again. After showing scenes of the departure from New York and some of the activities on the ship, a short scene of animation showing geographically where the ship is going would be an interesting change to show our audience where the film was taking us. This is the purpose of the animation. Now for the technique.





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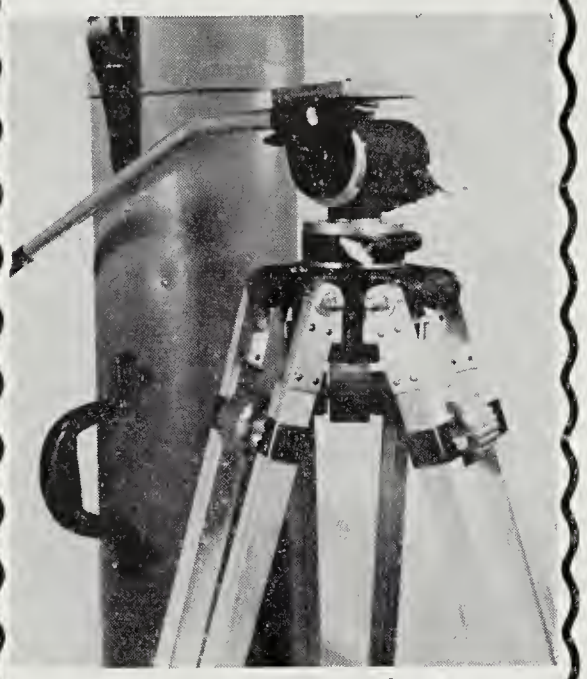
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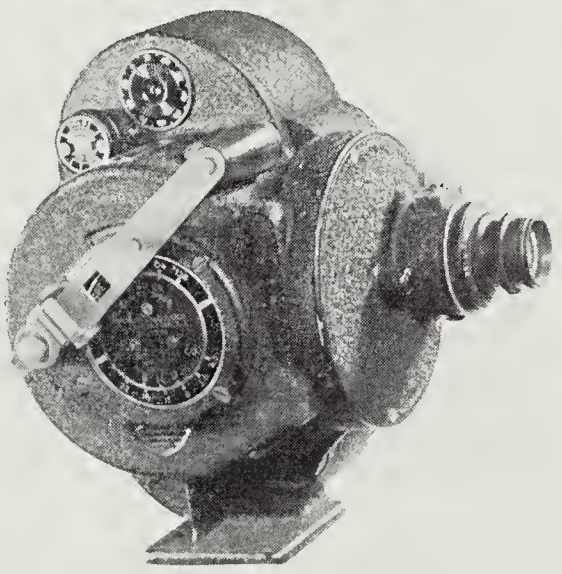
The background, in this case a map, is securely fastened to a firm base, for if the background shifts while the various frames are being photographed, a jumpy sequence will result. Use a mounting board or artist's board for the base and rubber cement for binding the two together. The background should be made a little larger than the area you will actually film.

The various cells which are put over the background must all line up perfectly. To assure smooth action in the finished sequence, punch registration holes in the background and in the cells; when they are assembled for shooting, background and cells are put on accurately located pegs so that perfect registration will result. A good substitute for registration pegs, and entirely adequate for a 2 or 3 cell job, is Scotch masking tape. In our project only two cells will be used, and they can be taped to the background—each cell to a different edge of the background—and lifted in and out as desired, as shown in Fig. 1.

To secure the first cell over the background, tape it to the top edge of the map to prevent it getting out of register. All three legs of the journey are painted on the cell. Artist's water-mixed paint is used, as this can easily be scratched off without marring the cell itself. To scratch off the paint a cotton stump pencil or an orange stick is used. All of these items, including the cells, are obtainable at artists supply stores, except the orange sticks which can be obtained at a drug store. The paint is a chalky paste-like substance and is made by Grumbacher and also by F. R. Miller. It is thinned down to a usable consistency with water. If the paint does not go on the cell smoothly, dissolve a small amount of detergent in the water. Either black or white paint can be used, or, if you want to put more color into your picture, a color which harmonizes well with the background may be used, such as yellow, orange or red. The first cell, with the route drawn or painted on it, we will call Cell A.

Because we are going to Bermuda and to Nassau, we decide to "highlight" these names on the map. This is done by laying another cell over the map and taping it securely in place at the left hand edge. This we will call Cell B. It is taped at the left-hand edge so that the cell can be folded in and out. With white paint the word Bermuda is outlined carefully on the cell while it is held in register. For keeping the cell in register a small piece of tape

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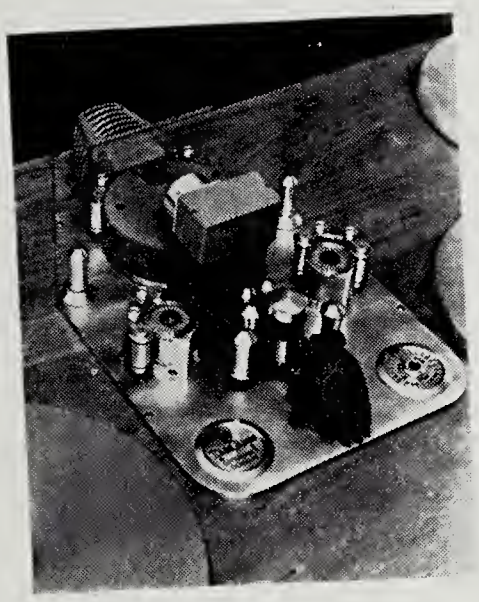
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can be put on the other three sides while it is being painted and while it is being shot. Cell C is then taped to the right hand edge, with the tape acting as a hinge, and the name Nassau is outlined on it in white paint. Once the highlights have been painted in, the cells should not be removed from the background unless there is some means of replacing them in perfect register, although they may be folded back on their tape hinges.

The art work is now done, and the scenes are ready to be shot. There will be three scenes all together. Chances are that in your film they will be inserted between live footage of happenings at Bermuda and Nassau and your arrival home. The entire shooting can be done at one time, however, and then cut apart to be spliced into your film. This can probably be done more easily if the animated scenes are shot one at a time, but let us, for the purpose of illustration, shoot this whole animated insert as one sequence.

A word of warning here. In any piece of animation, the maximum number of cells to be used over the background should be determined and then *that* number (in our case two) cells should be used over the background and other art work at all times, even though they do not carry art work. If the number of cells changes, this will

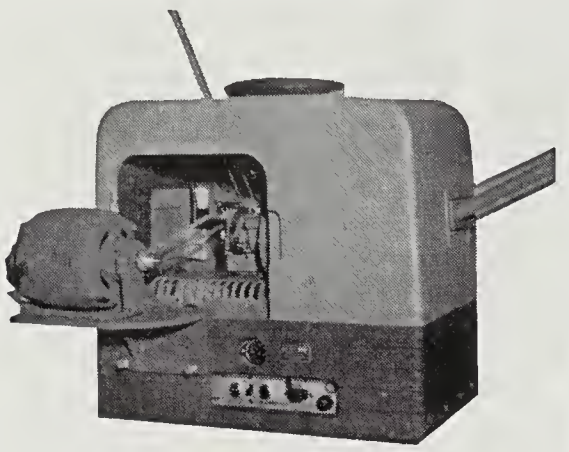
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cause not only the tone to change on the screen during projection, but also the color of the art work will change throughout the animation scenes whenever the number of cells is increased or decreased. This means that we will need to have blank cells on hand to replace the highlight cells when they are not over the background.

Next comes the "exposure sheet." This is the guide which tells us how much footage will be used for each bit of "action." It also tells us how many pieces of action are taking place at one time and where they come in and go out. Few of us have fading devices which are satisfactory for this kind of work, but let us write the exposure sheet as though we did have. Although fades and dissolves are used occasionally for bringing items into a scene, cuts and pop-ins are perfectly adequate in the majority of cases. The length of time each piece of action should last on the screen must be timed carefully with a stop watch or by some other accurate means, and the time in seconds is then converted into feet and frames. We then know the exact number of frames in each sequence or scene (there are forty frames to the foot in 16mm film). An important factor in this timing is the speed, or frames per second, at which the film will be projected—16 or 24 fps: All of the computations on the exposure sheet (Fig. 3) were made for film to be projected at 24 fps; if you intend to shoot at 16 fps you should use ⅔ of the footage shown here.

In determining how long each bit of action in the sequence should last on the screen, visualization as well as interpretation is essential. For example, in planning for the line that will extend from New York to Bermuda, we have to imagine how fast the line should travel or how long the action should last in going from point to point. The length of the action is timed and converted into the correct number of frames. If for some reason or other we wish to show a languid pace, a slow-moving line should be used and the amount of time and number of frames would have to be increased. If we want to show fast action, the length of time and number of frames would have to be cut down. We have complete control of our medium and our subject—the interpretation that we give it depends on the mood, the theme, or the tempo of our film. (Your experience, and the criticism by your friends on your first attempt will be the determining factor in how you handle this technique.)

To start an exposure sheet, write down symbols and lines representing the action, where it takes place, and the amount of time (in frames) that it lasts. Put the footage and the number of frames along side each bit of action or "hold" footage. (4^{08} indicates four feet plus eight frames). "Hold" footage is footage during which no action takes place; it is essentially a time element, which gives it its name.

Beside the line and symbols for action, insert a complete description of what takes place in that footage and how it takes place. Notice that where you are shooting the background alone there is one action line; where you are shooting the background plus the route line (an additional cell) there are two lines; and when the highlight is added to the background and route cell there are three lines. This is to show you when you are shooting more than one item, and how many cells you are actually using. Remember also that when you "pop out," or take out the highlight cell suddenly, a blank cell must be put in its place, as the density of the clear cell, no matter how slight, will affect the lightness or darkness of your picture, as previously pointed out.
(To be continued in December issue.)

"ANASTASIA"

(Continued from Page 665)

This scene sets the mood for "Anastasia," with the depressing rain and Miss Bergman's sad, distressed appearance contrasting with the warm light from the church and the hopeful Easter spirit of the worshippers with their candles.

Simplicity in lighting is the key to creating strong mood, and Hildyard exemplified this in every camera setup for this important sequence. His dramatic scenes show how it is not always necessary to have the players fully illuminated through every foot of film; that they should be allowed to move from full light to half-light to silhouette as they would in real life. It is in this way that camera mood becomes a fluid dramatic force.

Mood in "Anastasia" was also enhanced through the wide compositional format of CinemaScope. On the wider picture area, foreground objects were made to loom importantly in the composition, not only in order to frame the background action, but to provide dramatic emphasis within the scene.

Although many scenes for the picture were filmed in Paris, as well as in Copenhagen and London, Director Anatole Litvak was unable to obtain permission to use the actual St. Alexander's Cathedral as a location site. The Cathedral is one of three Russian Orthodox churches in Paris. Litvak had the Cathedral photographed with a still camera from all

angles. then reproduced at the Borehamwood studio in London. Here seven weeks and $56,000 were spent in meticulously recreating the Cathedral and its environs on the studion lot, including the laying of real concrete streets and pavements to support the crowd of more than 300 extras and the French autos and taxis of pre-1928 vintage which move through the scene.

While a tremendous amount of time, research and labor went into the creation of this important set, it is by no means the only impressive one in the film. Others include the Gay interior of a swank Russian nightclub in Paris; the dank, foreboding cellar of the same club; the interior of the Royal Opera House in Copenhagen; and the grand ballroom of one of Paris' top-fllght hotels. While it was on the natural locales in Paris and Copenhagen that Hildyard demonstrated his incomparable style of lighting and camera treatment, it was on the sets erected at Borehamwood—particularly on the grand ballroom set—that he so skillfully demonstrated what he had picked up about CinemaScope photography while in Hollywood.

It was an enormous undertaking, done on a grand scale, and with a story which incorporates both international intrigue and mystery and a tender love theme. It is certain to become one of 20th Century-Fox's best-photographed pictures of the year.

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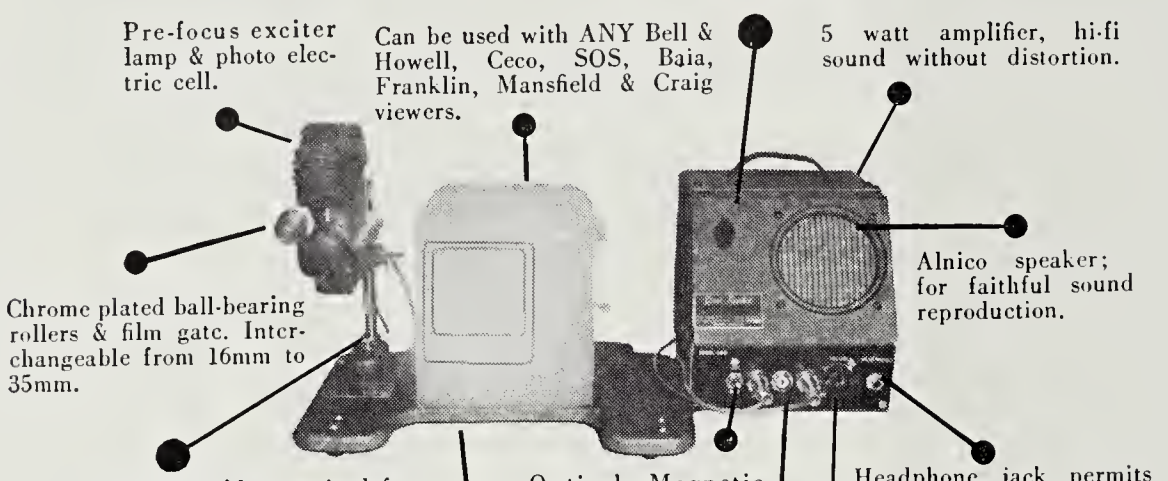
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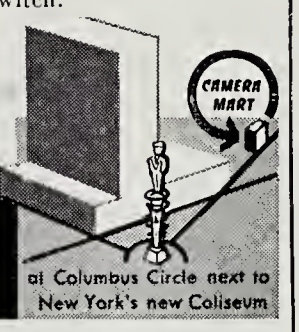
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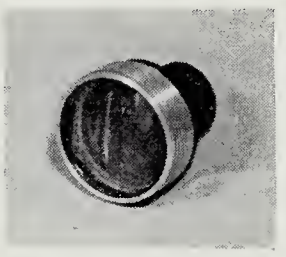
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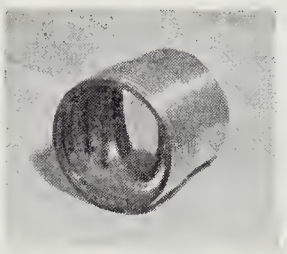
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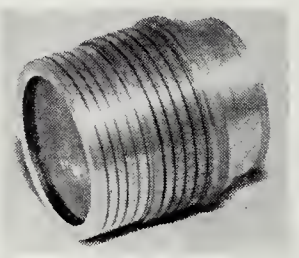


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THRILL SHOT

(Continued from Page 665)

to give the chase a climactic pictorial punch and conceived the idea of a dramatic low-angle camera shot of the oncoming Indian horde.

Ford and Hoch, who has photographed most of John Ford's pictures in recent years, got their heads together and worked out the shot and means for making it right on location. Sometimes shots of this kind are made by placing the camera in a shallow, partially-covered pit and operating it by remote control. But wishing to maintain VistaVision's traditional sharpness and depth of field in this important shot, it was decided to have the operator and assistant handle the camera in the pit.

A deep pit was dug and shored up with heavy timbers, then roofed over with double timbers, leaving a small opening for the Technicolor VistaVision camera, as shown in the lower photo on page 665. The underground structure then was covered over with earth, leaving only the narrow camera opening and the camera itself showing.

Anticipating that the horses might shy away from the camera and go around it, flanking timbers were erected in a fence-like structure at either side of the pit, so as to funnel the horses and riders into camera range and lead them directly over the camera.

Before the take was made with the cameramen in the pit, the action was rehearsed a number of times. At first the horses shied away from the camera, but this was remedied by covering it with a blanket. Then, to get the horses to rise and jump directly over the camera—both for improved dramatic effect of the shot and to safeguard the camera—a timber was placed low across the narrow exit of the funnelling fencework, as may be seen in the top photo.

Director Ford made just one take, and was happy to get it without a mishap. During the shot, one horse kicked the top of the film magazine, causing the camera to tilt upward in its cradle. Fortunately no harm was done to the horse, camera or either of the cameramen in the pit; but the latter got a shower of sand that gave them some uncomfortable moments. Luckily, the horse that struck the camera was among the last to go over, and there already was sufficient footage for an acceptable take so that the latter part could easily be deleted.

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ELECTRONIC SPLICING

(Continued from Page 663)

of fusion in about one second's time. There is no warping nor weakening of the film, since heating is concentrated at the joint itself. As the current flows, it lights a small neon glow lamp (7, Fig. 1) coupled to the circuit inductively; when it stops the light goes out. The operator then knows that the splice has been effected and he releases the button.

The component parts of a prototype model of the dielectric unit, designed to be installed on a Bell & Howell professional splicer, are shown in Fig. 1. The power supply is designated 2, the oscillator box 3 and the special lower left-hand splicer plate 4. The push button 6 and neon lamp 7 have already been mentioned.

Fig. 2 shows the components installed on a Bell & Howell professional splicer. The power supply is mounted on the rear of the pedestal at 8, and the oscillator box with control button and indicator light is positioned just below the splicer jaws at 9. The four special plates are also shown in their proper mountings. The springs 10 provide positive short path grounding of the upper jaws when they are closed, necessary for proper operation of the oscillator.

Test splices made on Du Pont's prototype dielectric unit have shown extremely good projection performance. For example, a cellulose triacetate roll containing 100 weld-type splices was projected 500 times in a high-intensity arc projector at one-hour intervals without splice failure. A roll of Cronar film containing 80 dielectric splices was projected and rewound 1.000 times at one-hour intervals without a single splice failure.

"We forsee the need of further development work to arrive at a unit which is engineered from a production point of view." said Wilton R. Holm, who presented a paper describing the method at the recent semi-annual convention of the Society of Motion Picture and Television Engineers, held in Los Angeles last month.

"Also," Holm continued, "some technical problems remain, the most important of which is 'bleed-out' of fused film around ends of the splice."

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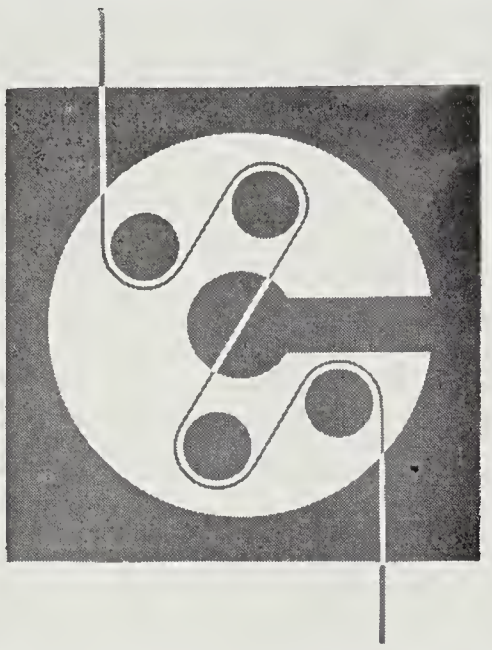
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ment, introduced its Neumade-Shepard electronic splicer which operates essentially as does the DuPont equipment. Whereas the latter is a unit intended to be adapted to existing professional film splicers, such as the Bell & Howell and others, the Neumade-Shepard is a complete unit. It also was demonstrated at the S.M.P.T.E. convention in Los Angeles. It is a table model 15″ x 15″ x 11″ and weighs 25 pounds. With interchangeable plates. 35mm, 16mm and 8mm films may be spliced on the one piece of equipment.

FILM FESTIVAL

(Continued from Page 675)

amateur film makers. On each program, at least one film maker whose effort shown will be brought to the television studio for interview.

Films will not be shown on a competitive basis. Mr. Schwab's intentions are to bring the amateur films to the public's attention and to search for possible professional talent. Naturally those whose films are selected for presentation will receive important recognition, i.e.: money, film equipment, certificates of merit, trophies, presentation on television, trips through professional sound stages, interviews with directors, cameramen, writers, editors, honorary film assignments with studios.

The requirement for acceptance of an amateur film for "Amateur Film Festival" is that the film be the work of a bona-fide amateur. The films can be 8mm, 16mm, or 35mm, sound or silent, black-and-white, or color. There is no limit as to the subject matter (drama, comedy, science, music, travelogue, surrealistic, special effects, etc.), just so long as the film is considered by its creator as a reflection of his talents and worthy of professional criticism. A single scene from a lengthy film can be of representative value.

The major question: "Is there enough exceptional amateur film to sustain a television program through a season of presenting two, three, or more films per show?" In order to attempt to answer this question, screening is now in full swing on all films presented for consideration to Amateur Film Festival, 210 N. Larchmont, Los Angeles, Calif.

Upon acceptance, the amateurs whose films have been selected for public presentation will be notified by the Festival committee and requested to sign a waiver to permit the committee to make a work print and, whenever necessary, to add sound music, dialogue, narration—one or all—depending on the needs of the film. The work print will be used to trim the film down to the time alloted the program. The trimming, or editing, is a necessity, but the quality and main intent of the film will be retained, for these are the all-important factors which made the film outstanding and desired. All rights to the original conception of the film are retained by the person, or persons, who created it.

It is Mr. Schwab's desire to highlight the amateur film maker, and to show that he has gone beyond the boundaries of home and family for his subject matter. It is his belief that by bringing these films to the attention of the public and especially the professional, he can fulfill the two-fold purpose of kindling an even wider interest in home movies, and of presenting for recognition the wealth of creative technical and production talent in the amateur film field.

NATURAMA

(Continued from Page 668)

Daniel J. Bloomberg, Republic's Chief Engineer, the studio's engineering department spent two years in tedious, methodical research work to develop and produce an improved anamorphic lens system which is compatible with all other similar wide-screen processes.

Following a study of every anamorphic lens system already in use or in stages of development, Mr. Yates, early in 1955, ordered specially-designed lenses made according to the studio engineering department's specifications. The lens order was placed with one of the leading optical manufacturers of France which had pioneered in the development of wide-screen optics. Following months of technical revision on the original lenses, a small compact squeeze lens was produced which could be used in conjunction with standard Mitchell camera lenses.

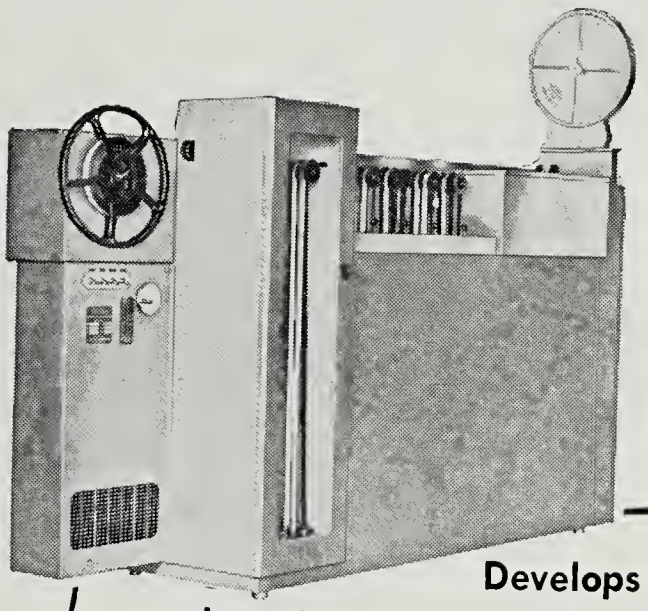
In their effort to improve on existing wide-screen processes, Republic engineers made use of the latest technical knowledge of lens design and the newest types of glass developed for lens manufacture. Preliminary tests indicated greatly improved resolution and definition, with a specific lack of graininess.

Republic's Naturama system is unique in that it is the first to employ an adaptor attachment which controls the simultaneous focusing of both the anamorphic and the camera lens. As far as is known, this type of control has not been attempted or perfected by any of the other major studios presently using anamorphic lenses in cinematography. Where anamorphic lens attachments have been used, it usually has been necessary for two camera assistants

to individually focus the anamorphic lens and the camera lens when making follow-focus shots. Inaccuracies in focusing often occurred because of the human element of error thus introduced. With Naturama photography, only one camera assistant is required to handle focusing of both lenses, which is afforded by the single control.

The Naturama wide-screen lens mount and its focusing mechanism were designed especially for use on the Mitchell NC and BNC cameras, which are the cameras used at Republic studio. The anamorphic lens (4, in Fig. 3) is held in close proximity to the camera lens (5 in Fig. 3) by a special bracket, which requires only slight alteration of the Mitchell camera case exterior. The bracket is shown at 7 in Fig. 4, along with the focusing linkage that couples both lenses and affords synchronous focusing.

The focusing mechanism for the Mitchell NC camera differs slightly from that designed for the BNC, as may be seen in Figs. 1 and 2. For the BNC, the gear train has been re-arranged and enclosed; otherwise it functions the same as the NC arrangement. Focusing control is by means of the single knob (6, Fig. 3), which turns the gears meshed with the lens gear ring and at the same time moves the cam (3, Fig. 2).



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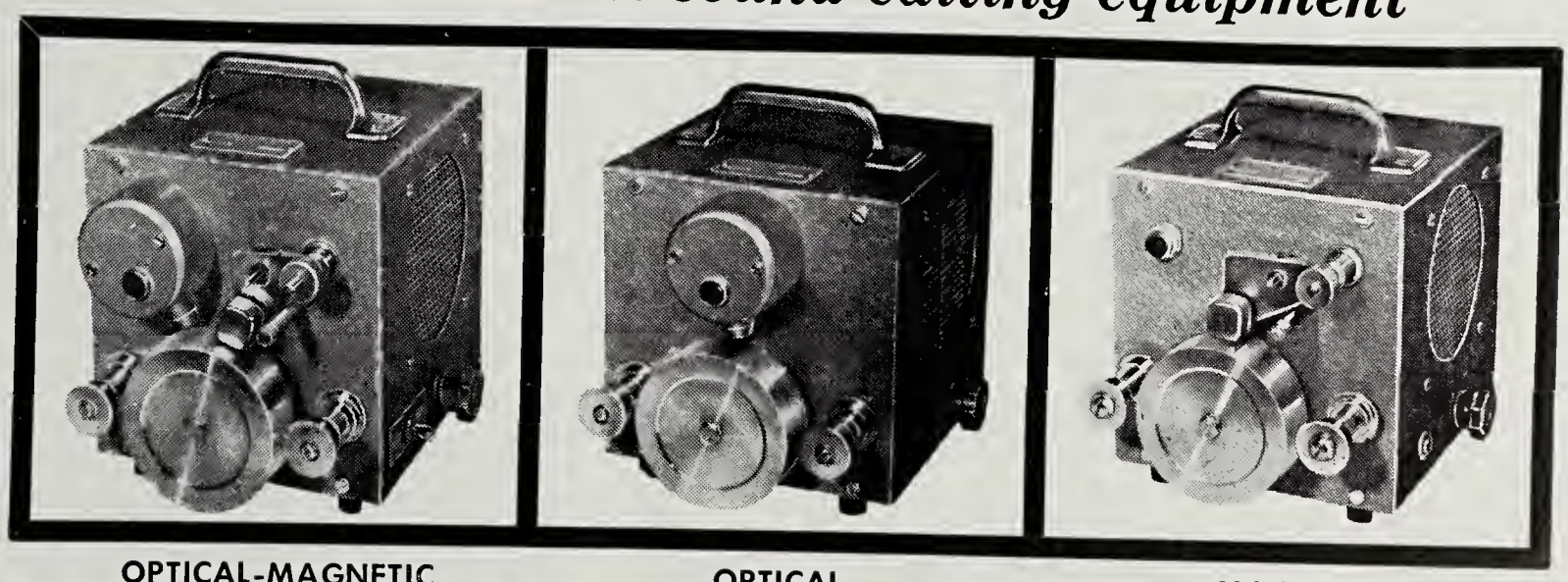
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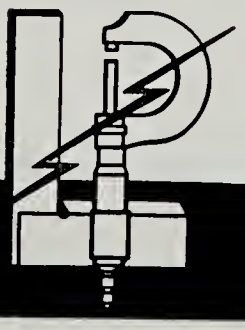
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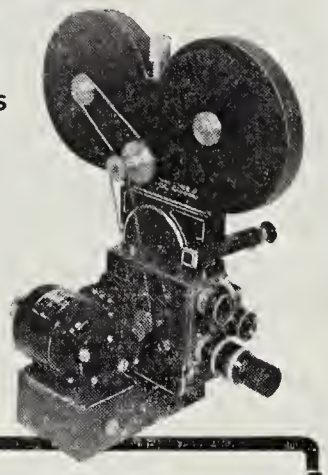
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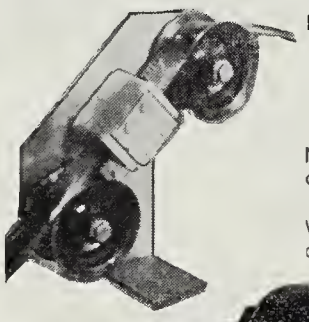
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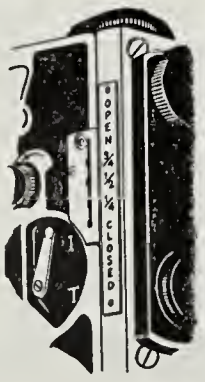
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The cam moves a rack and pinion gear that engages the anamorphic gear ring (1, Fig. 1, and 2, Fig.2).

While anamorphic lenses of uniform focal length are used in the Naturama system, these may be coupled with a choice of three-camera lenses — 50mm, 75mm, and 100mm. Each camera lens requires a different cam which has been especially designed and machined to produce simultaneous accurate focus of the camera lens with its respective anamorphic lens. To facilitate selection of the proper cam for each lens, figures are engraved on face of the cam identifying it.

In William Wade's camera department at Republic studio, a chart is posted that shows which set of three lenses are to be used with a specified Naturama wide-screen lens in conjunction with a particular Mitchell camera. For example, Mitchell BNC camera No. 29 calls for Naturama lens No. 39, which in turn may be used only with 50mm lens No. 493207; 75mm lens No. 499-455; or 100mm lens No. 468912. Each of the three lenses has been tested in combination with Naturama lens No. 39 mounted on Mitchell camera No. 29. There is a total of six different lens-anamorphic-camera combinations available, utilizing the studio's four Naturama wide-screen lenses and five of its Mitchell cameras.

Following the highly successful filming of "Maverick Queen" in the Naturama process, Republic scheduled practically its entire 1956 production program to be filmed in Naturama. To date, cinematographer Jack Marta, who photographed "Maverick Queen," has also shot "Lisbon," "Affair in Reno," and "Duel at Apache Wells" in the same wide-screen process.

Ellis "Bud" Thackery, A.S.C., has photographed "Thunder Over Reno," and "Accused of Murder" in Naturama, while Jack L. Russell, A.S.C., recently completed filming "Hell's Crossroads." using Republic's new Naturama lenses.

According to Mr. Bloomberg the Naturama system requires no additional equipment for those theatres that are now equipped with wide-screens and wide-screen lenses. He also pointed out that all Naturama productions are being released with an optical sound track in the aspect ratio of 2.35 to 1 — the full photographic aperture.

PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 652)

• Robert deGrasse, ASC, "The Danny Thomas Show,"* (Desilu Prods.) with Danny Thomas, Sherry Jackson. Sheldon Leonard, director; "The Brothers,"* (Desilu Prods.) with Gale Gordon. Hy Averback, director.

• Henry Cronjager, "Sheriff of Cochise,"* (Desilu Prods.) with John Bromfield. Lee Sholem, director.

• Joe Novak, ASC, "Wire Service,"* (Desilu Prods.) with Dane Clark. Various directors.

• Charles Straumer, "Adventures of Jim Bowie,"* (Desilu Prods.) with Scott Forbes. Lewis Foster, director.

PARAMOUNT

• Sam Leavitt, ASC, "Flamenco," (VistaVision and Color) (Being photographed in Spain) with Carmen Sevilla and Richard Kiley. Don Siegel, director.

• Haskell Boggs, "The Delicate Delinquent," (VistaVision) with Jerry Lewis and Martha Hyer. Don McGuire, director.

• Daniel L. Fapp, ASC, "The Joker Is Wild," (VistaVision) with Frank Sinatra and Jeanne Crain. Charles Vidor, director.

• Loyal Griggs, ASC, "The Tin Star," (VistaVision) with Henry Fonda and Betsy Palmer. Anthony Mann, director.

REPUBLIC STUDIOS

• Ed Colman, ASC, "Noah's Ark,"* (Mark VII Prods.) with Paul Burke. Jack Webb, director.

• Reggie Lanning, "Alfred Hitchcock Presents,"* H. Dougherty, director.

• Virgil Miller, ASC, "Do You Trust Your Wife,"* (Don Fedderson Prods.) with Edgar Bergen. Jim Morgan, director.

• Jack Marta, "Spoilers of the Forest," (Naturama; Trucolor) with Rod Cameron and Vera Ralston. Joe Kane, producer-director.

• John Russell, ASC, "The Millionaire,"* (Don Fedderson Prods.) Gerald Mayer, director; "Jane Wyman Theatre,"* (Lewman Prods.) with Jane Wyman. Sidney Lanfield, director; "Schlitz Playhouse of Stars,"* (Meridan Prods.) with Mark Stevens. John Brahm, director.

• William Sickner, ASC, "Heinz Studio 57,"* (Revue Prods.) with Allan Young. Jules Bricken, director; "On Trial,"* (Fordyce, Inc.) with Joseph Cotton. John Braham, director; "G. E. Theatre,"* (Revue Prods.) Jules Bricken, director.

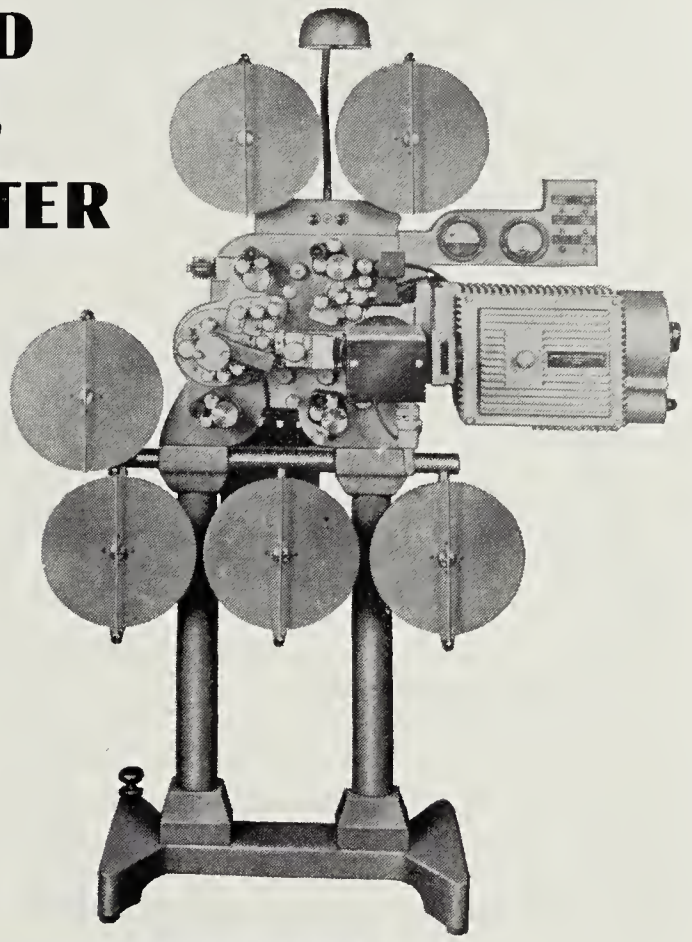
• Ellis Thackery, ASC, "Nevada State Troopers,"* with Rod Cameron. Richard Irving, director; "Frontier Doctor,"* (Studio City TV) with Rex Allen. William Whitney, director.

• Ellsworth Fredricks, ASC, "Jane Wyman Theatre,"* (Lewman Prods.) with Diane Clark. Sidney Lanfield, director; "Schlitz Playhouse of Stars,"* (Meridan Prods.) with Mickey Rooney. Leslie Martinson, director.

• Clark Ramsey, ASC, "Nevada State Troopers,"* with Rod Cameron. Richard Irving, director.

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• Herb Kirkpatrick, "The Crusader,"* (Revue Prods.) with Brian Keith. H. Dougherty, director; "The Millionaire,"* (Don Fedderson Prods.) with Marvin Miller. Al Green, director; "Soldiers of Fortune,"* (Revnue Prods.) with John Russell. Richard Irving, director.

HAL ROACH STUDIOS

• Jack Mackenzie, ASC, "Code 3,"* Various directors.

• Paul Ivano, "Stories of John Nesbitt,"* with John Nesbitt. Various directors.

• Lothrop Worth, ASC, "The Gale Storm Show,"* with Gale Storm and ZaSu Pitts. Various directors.

RKO

• Robert Planck, ASC, "The Girl Most Likely," (Eastman color) with Jane Powell and Cliff Robertson. Mitchell Leisen, director.

• Lucien Ballard, ASC, "The Lady and the Prowler," (color) with Diana Dors and Rod Steiger. John Farrow, producer-director.

• William Snyder, ASC, "Escapade in Japan," (wide-screen; color; shooting in Japan) with Teresa Wright and Cameron Mitchell. Arthur Lubin, producer-director.

• Maurice Hartzband, "The Violators," (Galahad Prods. shooting in N. Y.) with Arthur O'Connell. John Newland, director.

RKO-PATHE

• Frank Redman, ASC, "Hey Jeannie,"* (Four Star Prods.) with Jeannie Carson, Allen Jenkins. Les Goodwin, director.

• George Diskant, ASC, "Dick Powell's Zane Grey Theatre,"* (Four Star Prods.) with Dick Powell. Various directors; "Mr. Adam and Eve,"* (Bridge Prods., Inc.) with Ida Lupino, Howard Duff. Frederick de Cordova and Richard Kinon, directors.

SUNSET STAGE

• Walter Strenge, ASC, Richfield Oil commercial* (La Brea Prods.). Hank Ludwin, director.

• Glenn MacWilliams, A-1 Beer commercial* (La Brea Prods.). Hank Ludwin, director; Richfield Oil commercial* (La Brea Prods.). Hank Ludwin, director; Cleveland Aluminum Co. commercial* (La Brea Prods.). Hank Ludwin, director.

20TH CENTURY FOX

• Ossie Morris, "Heaven Knows, Mr. Allison," with Deborah Kerr and Robert Mitchum. John Huston, director.

• Joseph MacDonald, ASC, "True Story of Jesse James," (CinemaScope and Color) with Robert Wagner, Jeffery Hunter and Hope Lang. Nicholas Ray, director.

• Charles Clarke, ASC, "Three Brave Men," (CinemaScope) with Ernest Borgnine, Ray Milland and Diane Jergens. Philip Dunne, director. "Oh, Men! Oh, Women!" (CinemaScope & color) with Dan Dailey and Ginger Rogers. Nunnally Johnson, producer-director.

• Leon Shamroy, ASC, "The Girl Can't Help It," (CinemaScope) with Tom Ewell and Jayne Mansfield. Frank Tashlin, director.

(Continued on Page 694)

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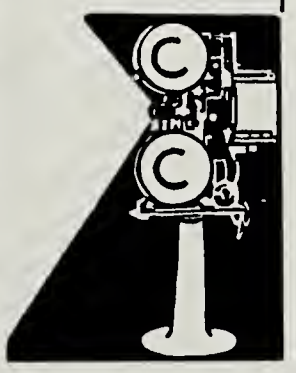
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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 693)

• MILTON KRASNER, ASC (shooting in Greece; CinemaScope; DeLuxe color), "Boy On a Dolphin," with Alan Ladd, Clifton Webb and Sophia Loren. Jean Negulesco, director.

• JOHN BOYLE, ASC, "The Restless Breed," (Eastmancolor; National Pictures) with Scott Brady and Anne Bancroft. Allan Dwan, director.

• FREDERICK YOUNG, ASC, "Island in the Sun" (CinemaScope & color; shooting in B.W.I.) with James Mason and Joan Fontaine. Robert Rossen, director.

• BRYDON BAKER, "Man From Abilene," (Brady-Glasser Prod.) with Scott Brady and Mala Powers. Edward Bernds, director.

UNIVERSAL - INTERNATIONAL

• RUSSELL METTY, ASC, "Man Afraid," (CinemaScope) with George Nader, Tim Hovey and Phyllis Thaxter. Harry Keller, director.

• WILLIAM DANIELS, ASC, "Night Passage," (Technirama) with James Stewart and Dianne Foster. James Neilson, director.

• ELLIS CARTER, ASC, "The Land Unknown," (CinemaScope) with Jock Mahoney and Shawn Smith. Virgil Vogel, director.

• ARTHUR ARLING, ASC, "Pay the Devil," (CinemaScope) with Jeff Chandler and Orson Welles. Jack Arnold, director.

• IRVING GLASSBERG, ASC, "Lux Commercial.* T. Armistead, director; General Motors commercial.* Wil Cowan, director; Kellogg commercials.* Jack Daniels, director.

• CHARLES WELBOURN, Ford Commercial.* John Sherwood, director.

• JAMES DROUGHT, Ford For 1957 commercial.* Wil Cowan, director.

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• ARTHUR J. ORNITZ, "If You Managed Millions," (Industrial film, Calvin Bullock & Co.) Jack Daniels, director.

WARNER BROS.

• STANLEY CORTEZ, ASC, "Melville Goodwin, U.S.A." with Susan Hayward and Kirk Douglas. H. C. Potter, director.

• JACK CARDIFF, "The Sleeping Prince," (LOP Production shooting in London) with Marilyn Monroe and Laurence Olivier. Laurence Olivier, producer-director.

(Continued on Page 696)

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(Continued on Next Page)

Classified Ads

(Continued from Preceding Page)

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CINEMATOGRAPHER

PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 694)

● HARRY STRADLING, ASC, & GAYNE RESCHER, ASC, "A Face In The Crowd," (Newton Prod. shooting in Arkansas) with Andy Griffith and Patricia Neal. Elia Kazan, producer-director.

● WILLIAM CLOTHIER, "Lafayette Escadrille," with Tab Hunter and Etchika Choureau. Wm. Wellman, producer-director.

● RAY FERNSTROM, ASC, "Lafayette Escadrille," (Aerial photography).

● HAROLD STINE, ASC, "Conflict,"* with Eugene Martin. Walter Doniger, director.

● TED MCCORD, ASC, "Conflict,"* with Charles Ruggles and Natalie Wood. John Rush, director.

NEW KODAK PAGEANT PROJECTOR

EASTMAN KODAK COMPANY has introduced a new projector for magnetic sound recording and projection. The new Kodascope Pageant Sound Projector, Magnetic-Optical, has all the quality features characteristic of the Pageant line, including an extremely low level projection noise which minimizes interference during recording.

The Pageant Magnetic-Optical Projector provides excellent sound quality from single-perforated film with full-width or half-width magnetic striping, or from double-perforated film with quarter-width striping. A magnetic track can be added to a sound film with a conventional optical track.

With this projector sound movies can be made as inexpensively as most silent films, because the need for costly art work for titles and sub-titles is eliminated, and a magnetic striping may be added for approximately 2½ cents per foot of film.

A microphone is supplied with the projector and the proper recording volume can be pre-set; a flashing light indicates the correct recording level at all times. Mistakes are easily corrected by reversing the film and re-recording.

The projector is designed so that a record player, tape recorder, or other sound source can be plugged into it for direct recording. Thus, background music and narration can be recorded at the same time or separately. Simultaneous recording is made possible by independent volume controls with adjustable "stops" which can be pre-set for the minimum and maximum volume desired. They are a part of a "built-in mixer" system which enables recording of both music and narration at suitable levels.

It is also possible to record the music first, at normal volume, and add the narration later with controls set at "magnetic overlap" to automatically reduce the music to background level.

The projector has a lock with removable key to prevent accidental erasing of the sound track. An additional safeguard is provided by a red warning light which goes on automatically when the projector is erasing and recording.

Operating controls are easy to use, conveniently located. The reel arms are attached to the projector and fold for storage without removing belts. It has an 8-inch speaker in a lift-off baffle cover and, like all Pageant projectors, is prelubricated.

The new magnetic-optical projector is priced at $795.

GUN CAMERA

(Continued from Page 672)

frames per second as well as 16 f.p.s., Video Films' cameraman secured some excellent studies of car wheels in slow-motion—shooting at 64 f.p.s.

The footage, in color, provided an important sequence in a sales promotion film, "Ghost of a Chance," which Video Films recently produced for Monroe Auto Equipment Company, of Monroe, Michigon.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF
AMERICAN CINEMATOGRAPHER, published monthly at Los Angeles, California, for October 1, 1956.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months oreceding the dote shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

ARTHUR E. GAVIN,
Editor.

Sworn to and subscribed before me this 28th day of September, 1956.

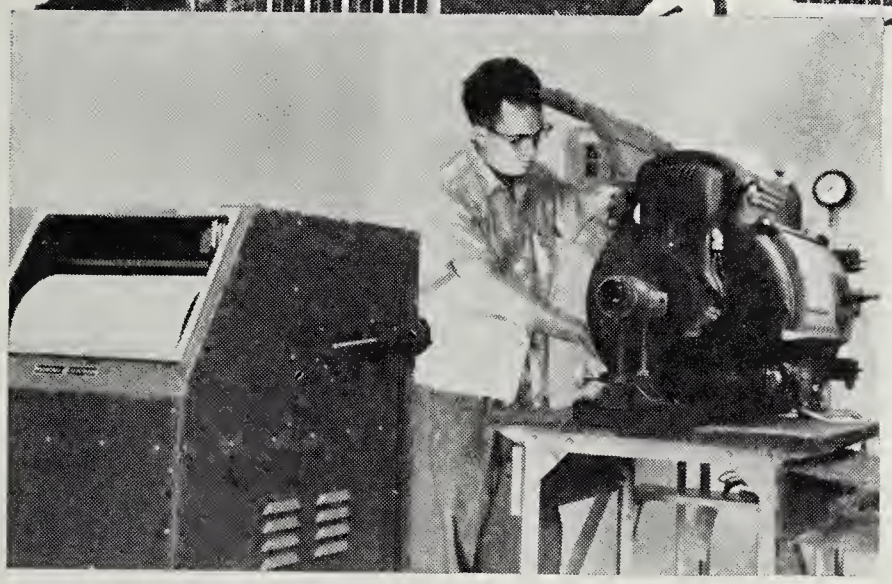
(Seal) N. Eagle
Notory Public.

(My commission expires January 7, 1957.

At the outer boundaries of knowledge...

New Research Laboratories in Parma, Ohio. To expand its basic research in solid state and chemical physics, National Carbon Company has recently enlarged its staff of scientists and provided them with an ideal laboratory setup for creative work.





Studying color balance for better color movies. The spectroradiometer analyzes the complete "rainbow" of colors in projected light — to give an investigator, in one and a half minutes, information that he formerly worked half a day to get. Research like this helped National Carbon Company win the coveted "Oscar" this year for developing lighting carbons which were balanced to operate with other studio lights.

New "particle" theory promises help in developing still brighter carbon arcs

Although the high-intensity arc has been around for forty years now, nobody has yet been able to explain satisfactorily how it produces the super-bright light so useful for movie projection and studio lighting.

At one time it was thought that the brilliant light came from atomic reactions taking place within the glowing crater or pit at the tip of the positive electrode where the energy of the arc is highly concentrated. But this theory has been radically modified by researchers at National Carbon's laboratories.

Now it is believed that a much more complicated process takes place in the crater region where powerful electrical currents heat the carbon to temperatures of 10,000 to 12,000 degrees Fahrenheit, roughly the temperature of the sun's surface. According to the new "particle" theory, material from the molten floor of the crater vaporizes into tiny particles of the order of a millionth of an inch in diameter. These white-hot liquid droplets stream out into the space between the carbon electrodes of the arc to form a long, luminous tail flame or "comet tail."

Precise knowledge of this process, combined with results of other experiments now under way at the Parma laboratories, should point the way toward new, brighter lighting carbons that will stand up to higher and higher currents and temperatures. More details of the work at Parma are given in a new booklet titled "Research." Write for a copy.

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Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



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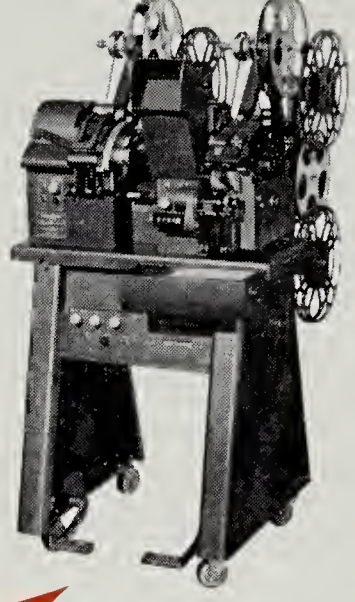
- Shooting Night Scenes in Daylight
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- Filming "12 Angry Men" on a Single Set

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FOREIGN 45c

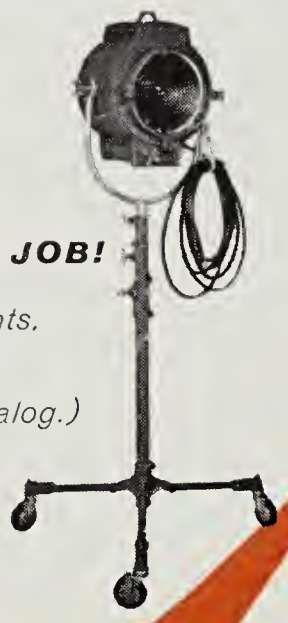
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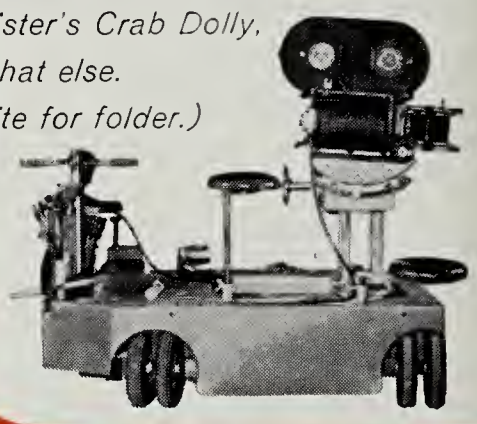
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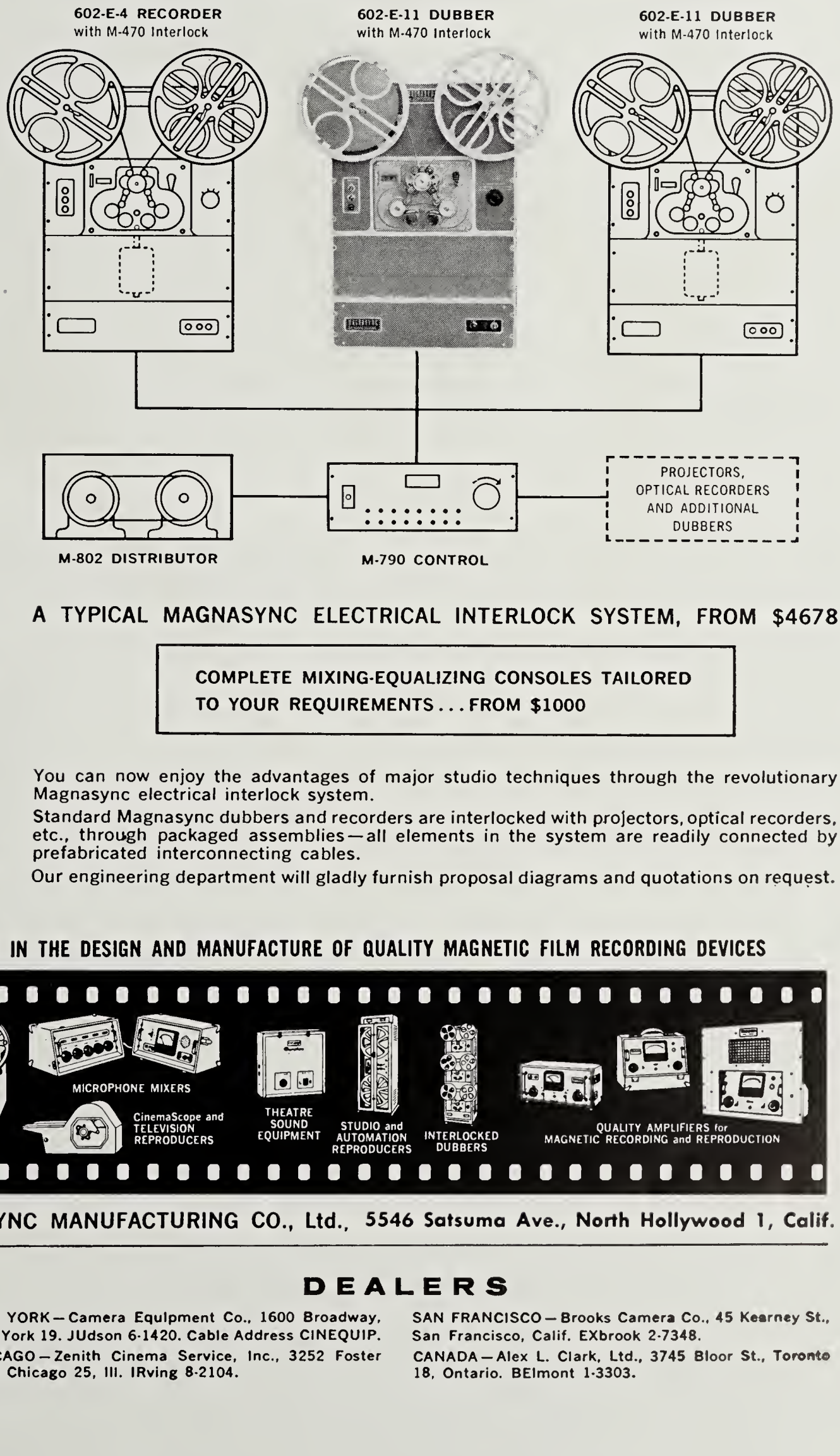
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JACKIE GLEASON'S "HONEYMOONERS" is filmed by Du Mont Electronicam System which incorporates an especially designed and adapted 35mm Mitchell movie camera. Here are Jackie Gleason and Joyce Randolph, right, peering through the camera lens at Audrey Meadows and Art Carney.

NEW ELECTRONICAM REDUCES SHOOTING TIME

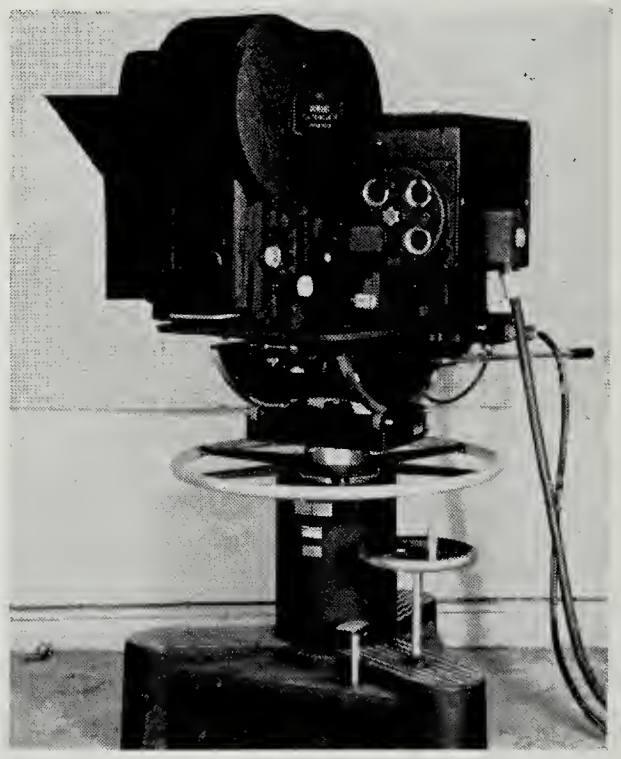
Du Mont's Video-Film System incorporates both Mitchell 35 mm film camera and TV camera

First to use a video-film system in major TV film production is Jackie Gleason's popular show "The Honeymooners." In going "live on film," Jackie Gleason makes use of the new Du Mont Electronicam System, which combines advanced TV techniques with highest quality 35mm photography.

Heart of the Electronicam System is a completely new type of unit, blending a Du Mont TV camera and a specially adapted Mitchell 35mm camera using a common lens system. It gives the producer full advantage of the best techniques of motion picture production while enjoying the time saving and broadened creative scope available in video's electronic practices. Savings in shooting time and costs are substantial.

The 35mm Mitchell cameras used as integral parts of the Electronicam System produce consistently superior black and white films, as well as color films which are unequaled for uniformity of quality. Mitchell cameras today serve not only in the television industry, but also are the predominant choice in the production of governmental, industrial, research and educational films, as well as being standard equipment for major studios throughout the world.

Complete information on Mitchell cameras is available upon request on your letterhead.



Du Mont Electronicam pick-up; Mitchell 35mm film camera on left, TV camera on right.

***85% of professional motion pictures shown in theatres throughout the world are filmed with a Mitchell**



Scene from "The Honeymooners" shows Jackie Gleason and Art Carney on set before three pick-up units of Electronicam System. Each pick-up unit has both TV camera and specially designed Mitchell film camera.

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Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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ON THE COVER

DIRECTOR H. C. Potter (center, back to camera) explains the action of a scene to Paul Stewart and Susan Hayward, as Director of Photography Stanley Cortez, A.S.C. (left) and his camera crew prepare to shoot the scene for "Melville Goodwin, U.S.A.," a Warner Brothers production.—Photo by Floyd McCarty.

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBCRIPTIONS: United States and Canada, $4.00 per year; Foreign, including Pan-American Union, $5.00 per year. Single copies 35 cents; back numbers 40 cents; foreign single copies, 40 cents; back numbers, 45 cents. Advertising rates on application. Copyright 1956 by A. S. C. Agency, Inc.

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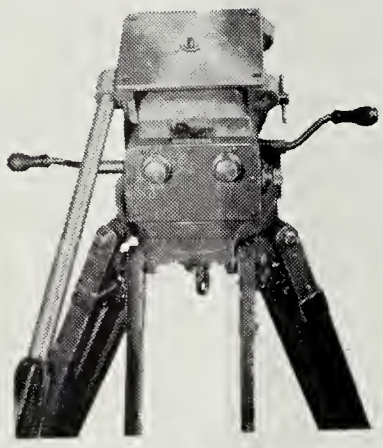
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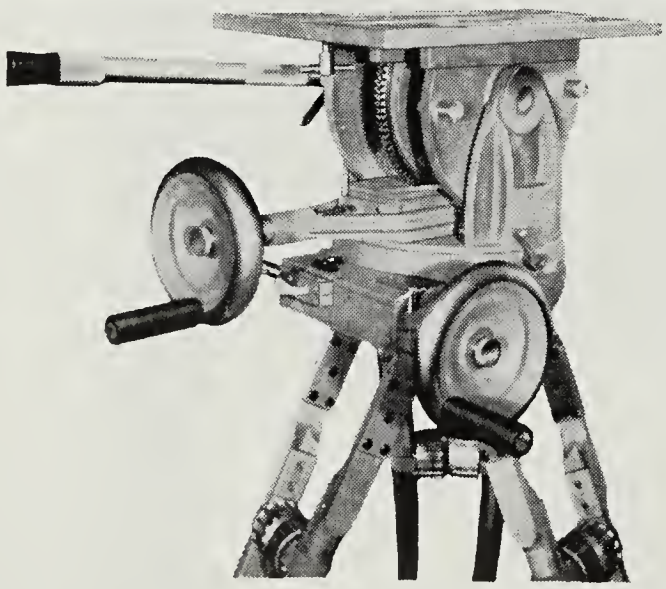
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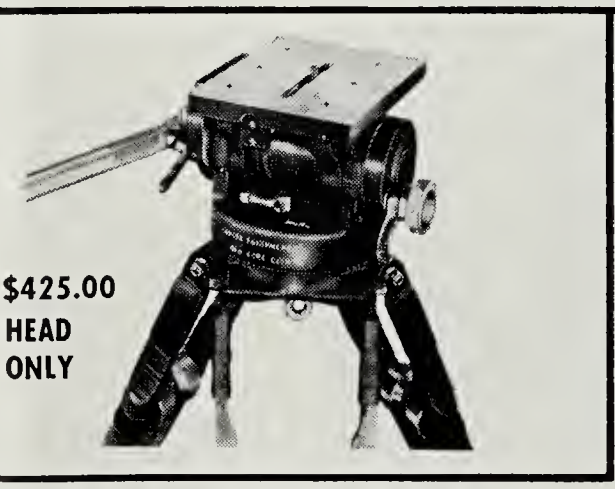


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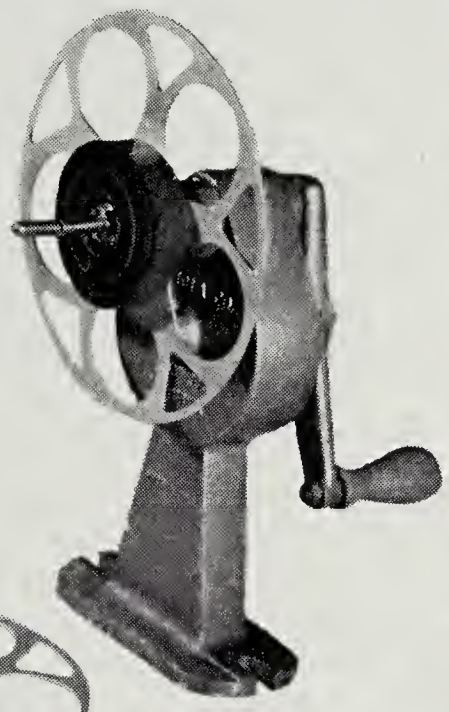
CECO Film Equipment

As most Pros know, CECO is headquarters for the world's finest cameras, recording and editing equipment and photographic accessories. But CECO is more than that. It maintains the finest service department in the East—also an engineering and design department. CECO is always happy to consult with film makers—either beginners or Academy Award Winners—about their technical problems. May we help you?

ALUMINUM SPLIT APART REELS

Economically Priced • Highest Quality

CECO Aluminum Split Apart Reels are a fast and inexpensive method of winding film from reels to cores, or core to core ond can be used for projection reels without the necessity of having the film put on solid reels. The core is threaded for quick locking, ond o grip is pressed into the flange wall to hold the plastic core.



16MM ALUMINUM SPLIT REELS

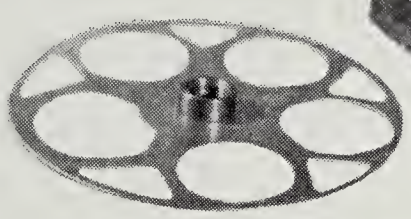
Size	Price
400′	$4.20
1200′	7.00

35MM ALUMINUM SPLIT REELS

Size	Price
1000′	$6.90

17-½MM

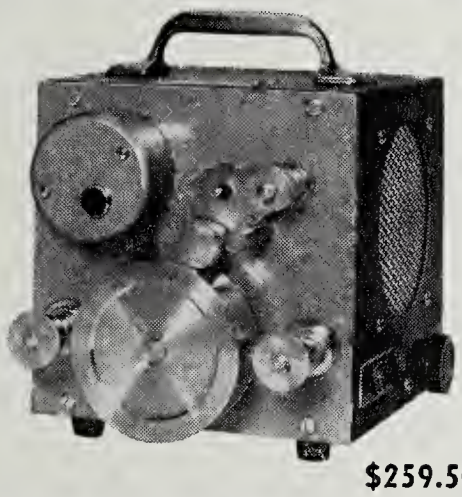
Size	Price
400′	$4.70
1200′	7.50





$232.00

MM16-AKG D-25 MICROPHONE is dynamic cardioid type. Eliminates wind and AC hum. Excellent frequency response from 30 to 15,000 cps. Completely shock maunted, light enough to be used on micraphone "fish-pole", weighs only 24 ounces. Contains built-in dialogue equalizer with three steps to attenuate progressively at 50 cycles. A variety of madels for every specific need.



$259.50

SR4-PRECISION LABORATORIES OPTICAL AND MAGNETIC SOUND READER accepts both 16mm ond 35mm optical or magnetic film. Cansists of amplifier, head assembly and film transport. SR5-Set of collapsible rollers far use with 17.5mm ond ¼" tape. SR6-Similar, but without magnetic head mount. Available with either Optical or Mognetic sound only.

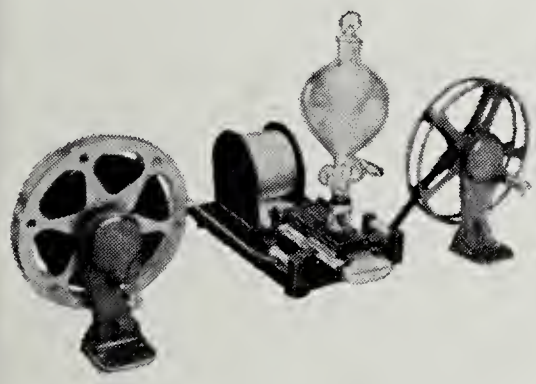


$22.00

E100-CECO DOUBLE ZIPPER CHANGING BAG Is light-praaf, large enaugh to accammodate 1000′ 35mm magazines or 1200′ 16mm magazine. 34" x 48" black sateen outer bag. Inner bag of heavy rubber fabric pravided with raamy sleeves having elastic light-tight wristlets.

CECO OUTDOOR REFLECTORS for reflectian af sunlight. Surfaced with silvered reflectian papers. In sizes 24" x 24", 30" x 30", 36" x 36", and 48" x 48" far use with yoke & stand. Scrims & Dots avoilable.





FC4-ECCO "1500" SPEEDROLL APPLICATOR permits cleaning and inspection of roll, strip or mavie film in one easy operatian. Consists af bakelite cleaning unit, woal-felt cleaning wicks, teflan idler rollers; also a 10 oz. glass fluid unit guaranteed against leakage. Valve cantrals flaw of cleaning fluid which is always visible. 16mm or 35mm model. **$29.50**



$350.00

X101-CECO VARIABLE SPEED MOTOR with tachometer far **CINE-KODAK SPECIAL.** Speeds fram 16 to 64 frames per secand. Quick maunting, no tools required. 12-volt or 110-volt operation. Also available 110-valt Synch Matars for Bolex, Mitchell, Bell & Howell & Eastman Cine Kodak K-100 Cameras. Variable speed motors with Tach for Mitchell & Bell & Hawell cameras.







$8.50 ond up

CECO SLATES. E67-MASONITE, 11" x 14", with clapstick. E68-12" high, 11" wide, metal sliding numbers, with clapstick. E69-13½" x 13½", made af fiberbaard with metal border, flip numbers, clapstick.

ADDITIONAL PRODUCTS—Ace Clear Visian Splicers • Editing Barrels • Editing Racks • Electric Footage Timers • Exposure Meters • Silent & Saund Projectars • Screens • Film Processing Equipment • Film Shipping Cases • Film Editors Gloves • Marking Pencils • Retractable Grease Pencils • Ropidograph Pens • Flomaster Pen Sets • Kum Kleens Labels • Blooping Tape • Blooping Ink • Dulling Sproy • Alpha Ray Plutonium Lipstick Brushes • Filters • Number & Letter Punches • Camera & Projectar Oil.

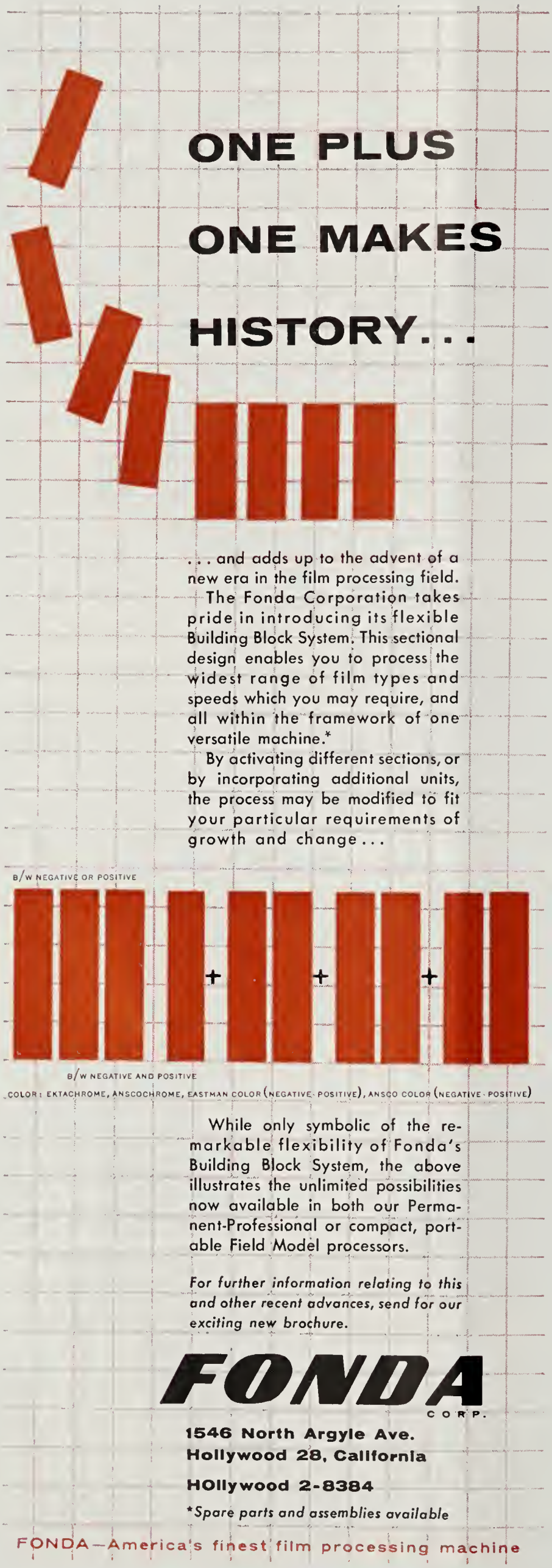
Prices Subject to Change Without Notice

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FRANK C. ZUCKER

CAMERA EQUIPMENT CO., INC.

Dept. A 315 West 43rd St.,
New York 36, N. Y. JUdson 6-1420



WHAT'S NEW

In Equipment, Accessories, Services

Twin-track Magna Stripe

Reeves Soundcraft Corp., 10 East 52nd St., New York 22, N. Y., announces Twin-track Magna Stripe which enables film producers to use one magnetic film for original recording and also for editing. The new magnetic sound film has a clear edge for marking or coding, and a clear center enabling the editor to see through to the picture. A colored balancing stripe on one edge of the film provides for easy identification of A or B track, even while the equipment is in operation.

New Camera Light Bars

Eastman Kodak Company, Rochester, New York, announces its new Brownie Two-Lamp Movie Light for use with cine cameras in making indoor movies.

A companion unit, having provision for four photo lamps, is also offered and makes it possible to shoot color movies indoors up to 18 feet from subject at a lens stop of f/1.9. The four-lamp bar folds for easy storage and has two switches controlling two or four lights as desired.

DuPont "Superior" 4 Film

"Superior" 4 panchromatic motion picture negative film, type 928, rated at 320 daylight and 250 tungsten, is now available in both 16mm and 35mm widths, it has been announced by DuPont Photo Products Department, Wilmington, Delaware.

The new negative stock has a fine-grain, wide-latitude emulsion which permits high quality results under a wide variety of outdoor or indoor lighting conditions — particularly under "existing" light.

The new film is said to be ideally suited to television film production because of its long tonal scale.

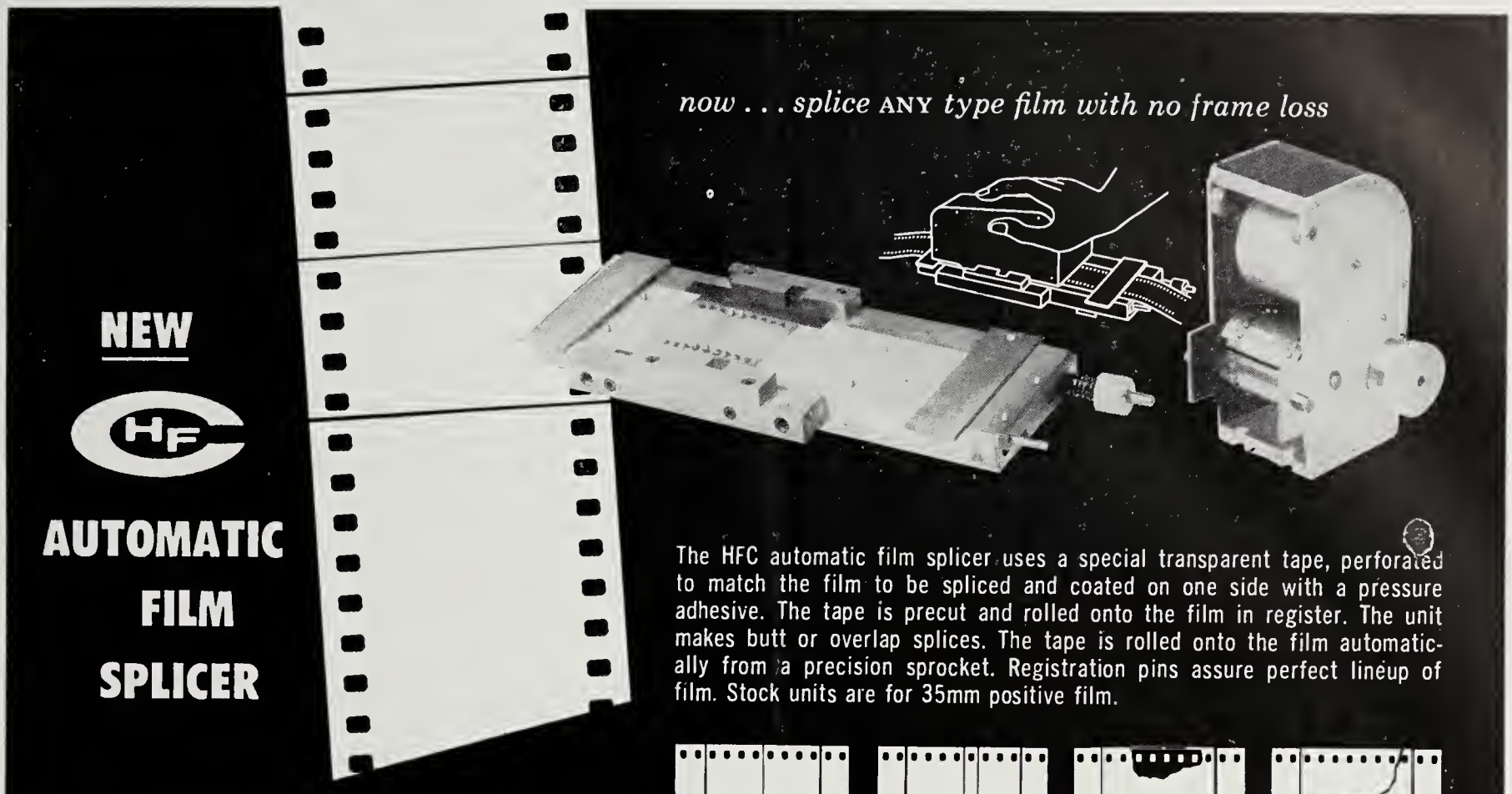
Anscochrome Processing

Western Cine Service, 144 East 8th Avenue, Denver, Colorado, has added Anscochrome processing to its established black-and-white lab service. With a new color machine and 1500 square feet of new space, company now has facilities for offering every laboratory service for both professional and amateur users of motion picture film, both color and black-and-white.

Optical Parts Catalog

Latest information on a wide variety

(Continued on Page 710)



NEW

HFC

AUTOMATIC FILM SPLICER

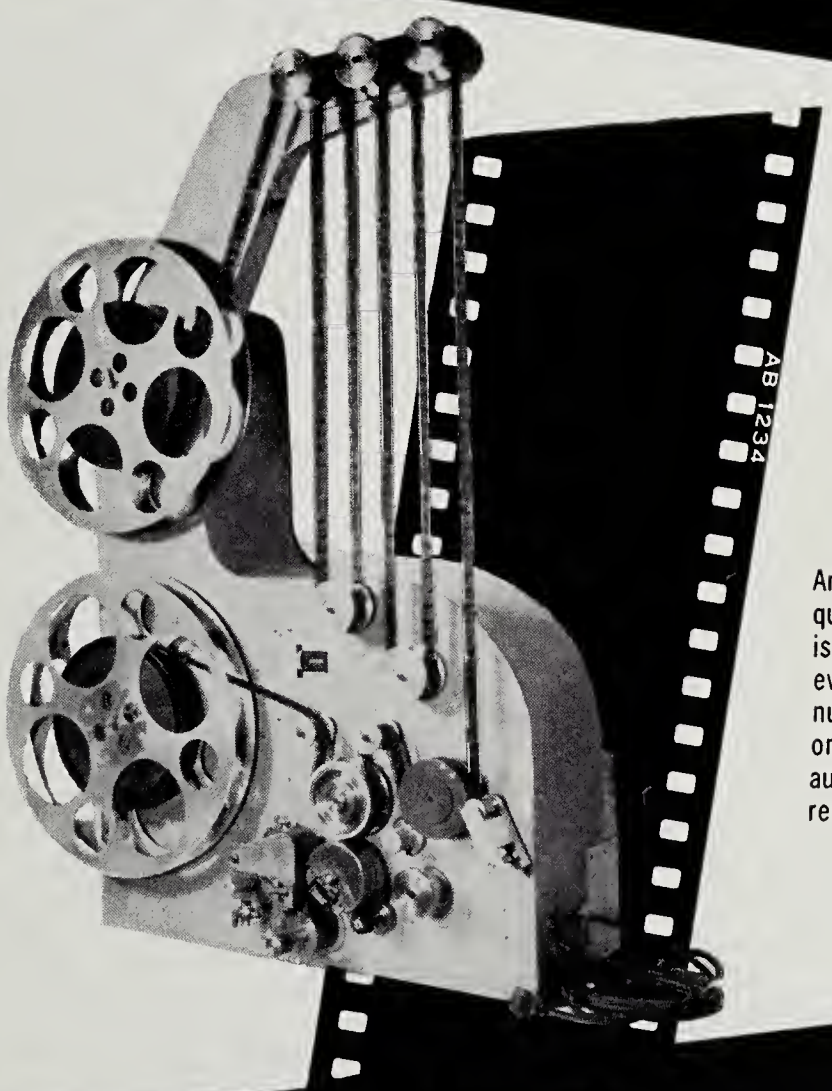
now . . . splice ANY *type film with no frame loss*

The HFC automatic film splicer uses a special transparent tape, perforated to match the film to be spliced and coated on one side with a pressure adhesive. The tape is precut and rolled onto the film in register. The unit makes butt or overlap splices. The tape is rolled onto the film automatically from a precision sprocket. Registration pins assure perfect lineup of film. Stock units are for 35mm positive film.



BUTT SPLICE | OVERLAP SPLICE | PERFORATION REPAIR | TEAR REPAIR

AFS—35—(35MM MODEL)
AFS—16—(16MM MODEL)
$175 F.O.B. HOLLYWOOD



HFC

FILM-EDGE NUMBERING MACHINE

(Coding Machine)

An important aid and time saving device which enables the Film Editor to quickly tie together the picture and sound track in perfect synchronization is the HFC film edge numbering or coding machine. The machine numbers every 16 frames in 35mm. The 16mm model numbers every 40 frames. The numbering block generally consists of two letter wheels or one number and one letter wheel manually operated and four number wheels which move automatically and number the film from 0001 to 9999. All numbers can be reset by hand to begin at any number.

ENM—35—(35MM MODEL)
ENM—16—(16MM MODEL)
$2500 F.O.B. HOLLYWOOD

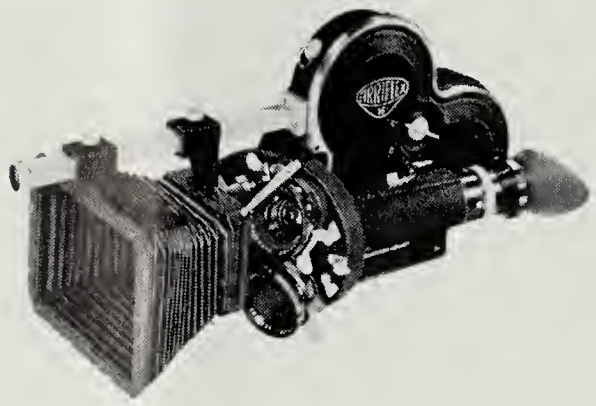
AT BETTER DEALERS EVERYWHERE

precision film editing equipment/reels, cans and shipping cases

HOLLYWOOD FILM COMPANY

956 N. Seward Street, Hollywood 38, California/HOllywood 2-3284

branch office:
HOLLYWOOD FILM COMPANY
630 Ninth Avenue, New York, New York/CIrcle 6-9309



why the ARRIFLEX 16 is the most desirable professional 16mm camera

Because of its features

TRUE MIRROR REFLEX SHUTTER
– not a beam splitting device – passes 100% of the light to film and viewing system intermittently.

FINDER SHOWS BRIGHT IMAGE THROUGH TAKING LENS
– even in poor light. 10X magnification; no parallax; no misframing; accurate, easy follow-focus.

REGISTRATION PIN IN PRECISION FILM GATE
– with balanced rear pressure pad, side pressure rail, cross stages around aperture. This means rock-steady pictures, no film "breathing," 35mm-like film quality.

THREE LENS DIVERGENT TURRET
– lets you use wide angle lens to 300mm telephoto without physical or optical interference.

INSTANT-CHANGE LENS MOUNT
– with large-flange surface insures positive seating and precise flange focus and alignment.

LARGEST CHOICE OF LENSES
– by famous makers. From 11.5mm extreme wide angle to longest telephoto.

VARIABLE SPEED MOTOR
– electrically driven by light, compact, rechargeable batteries. Motor instantly interchangeable for other types – Governor Controlled, Synchronous and Animation.

TACHOMETER, FOOTAGE AND FRAME COUNTERS

HAND-HELD FILMING
– all these features in a camera so light (only 6½ lbs), so formfitting, with its ingenious Contour Hand Grip, that steady, hand-held filming is easy.

Because of its versatility

It is a hand camera for newsreel and fast action filming

It is a studio camera when you add the 400′ Magazine and the Synchronous Motor.

It is a sound camera when you put it in the Arriflex Blimp.

It is also an animation camera, a scientific laboratory camera, a medical camera, a cine-micrographic camera.

You can start with the hand camera, and as your requirements demand, add the special purpose accessories, and yet be able to convert it back to a hand camera in a few seconds – and without the use of even a screwdriver.

Because it is rugged and reliable

Here is a precision camera that can "take a beating" and still deliver the goods.

For instance: Al Milotte, ace Disney wild-life photographer, shot over 90,000 feet for "African Lion" with one Arriflex 16, in the rough tropics.

Disney cameramen found the Arriflex 16 most reliable during the Navy North Pole Expedition in 1954.

Now eight Arriflex 16's are at the South Pole with Disney. Disney Studios has already purchased more than 30 Arriflex 16 cameras—so far.

Because of factory service in the U.S.

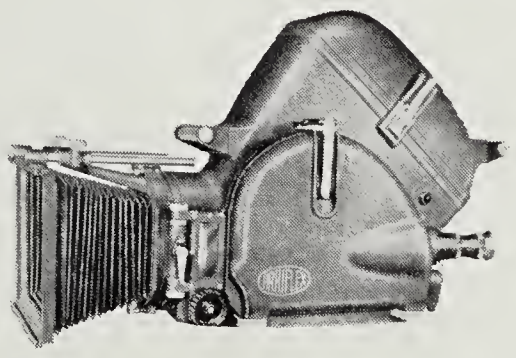
A modern, fully equipped service center is maintained in New York City, manned by factory trained technicians. A complete stock of Arriflex parts is always on hand. Because Arriflex owners derive their income through the use of their cameras, service is handled on the promptest possible basis—in most instances within 24 hours.

Because of its reasonable price

You cannot buy another registration-pin 16mm camera unless you pay more than twice as much. If you "doctor up" an ordinary 16mm camera with accessories needed for professional use, it will cost you more than the Arriflex and you still won't have a professional camera, not to talk about the many exclusive Arriflex features.

ARRIFLEX 16, complete with Variable Speed (wild) Motor, Battery Cable, Neck Strap $1625.00

Matte Box and Lenses, additional

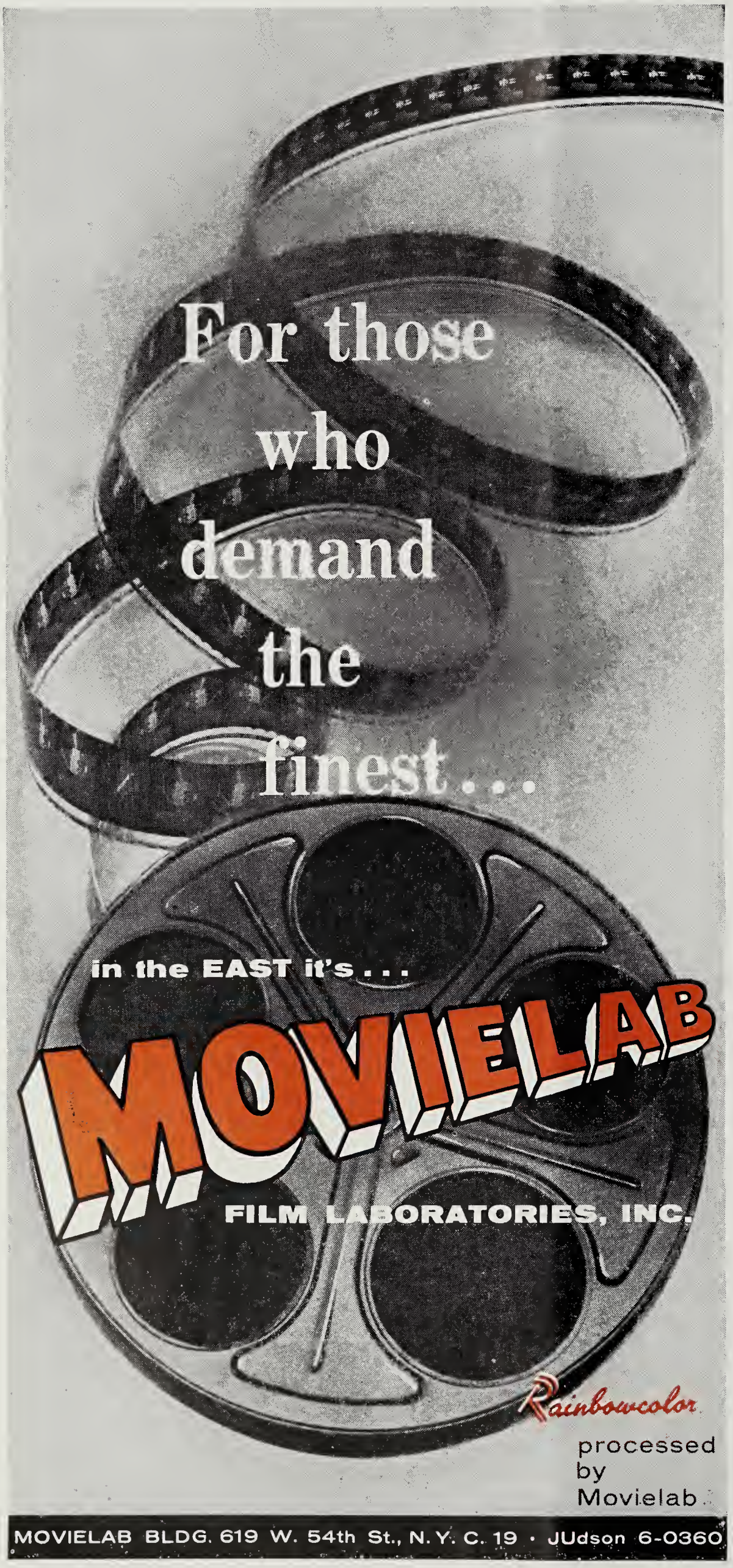


Sole U.S. Distributor

KLING PHOTO CORPORATION 257 Fourth Avenue, New York 10, N. Y.
7303 Melrose Avenue, Hollywood 46, Cal.

Representatives in: Boston, Mass. Charlotte, N. C. Chicago, Ill. Denver, Colo. Detroit, Mich. Houston, Tex. Kansas City, Mo. Hollywood, Cal. Memphis, Tenn. Miami, Fla. Newark, N. J. New York, N. Y. Philadelphia, Pa. San Francisco, Cal. Seattle, Wash.

Sold through authorized Arriflex Dealers.



WHAT'S NEW

(Continued From Page 706)

of special lenses, prisms, reflectors, etc., for industrial use is offered by Bausch & Lomb Optical Co., 635 St. Paul Street, Rochester, N. Y., in a 16-page catalog of optical parts.

Catalog also contains information on ground glass, heat absorption glass, retardation plates, and the Bausch Lomb precision glass engraving and optical coating services. Included also is price list detailing discount procedures, minimum ordering quantities, and terms of sale.

Copies are available free by writing the company direct.

Anti-static Film Cleaner

"Dual-Clean" is name of new chemical film cleaner which contains no carbon tet and is non-inflammable. Product removes dust, lint, grease-pencil marks, cue marks, masking tape residue, etc., also static electricity from all photographic film.

List price is $10.00 per gallon. Manufacturer is Nicholson Prods. Co., 3403A Cahuenga Blvd., Los Angeles 28, Calif.

Rental Service

Servicing mid-west motion picture and TV film producers is Victor Duncan, 4828 Oleatha, St. Louis 16, Missouri. Motion picture cameras available include Mitchell 35mm NC, Mitchell 16mm, Eyemos, Filmos, and Auricons; also blimps, lenses, motors, and tripods. No grip or lighting equipment is available. All equipment is late model. Price list available on request.

Camera Data

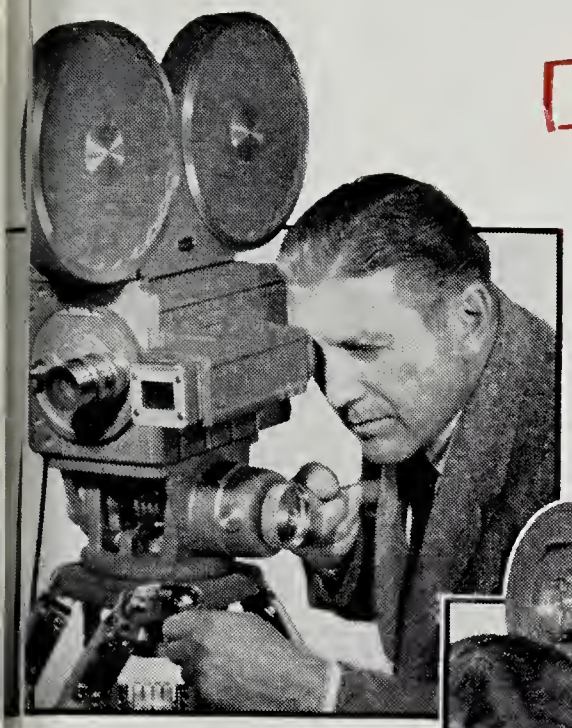
A new series of information sheets relating to their various models of instrumentation cameras, data cameras and accessories is available from Gordon Enterprises, 5362 No. Cahuenga Blvd., North Hollywood, Calif. Included is information regarding the company's 70mm Photosonic high-speed camera, strip cameras, roll and cut film dryers, film developers, printers, enlargers, and miscellaneous laboratory equipment.

Coated Optics Service

Pancro Mirrors, Inc., 2958 Los Feliz Blvd., Los Angeles 39, Calif., has installed larger and more efficient pumping systems for the company's steel vacuum chambers employed in coating photo lenses, mirrors, etc.

Company specializes in durable, high-reflecting front-surface mirrors as well as many types of beam-splitters, reflecting ultra-violet and infra-red films; also the dielectric coatings and neutral density graduate filters.

Auricon Hollywood



"Auricon Pro-600"
with Single-Lens "C" Mount,
Tele-Finder Objective, plus
Standard Auricon Finder.



"Auricon Pro-600"
with Critical Ground-Glass Focussing,
available on 3-Lens Turret Model.



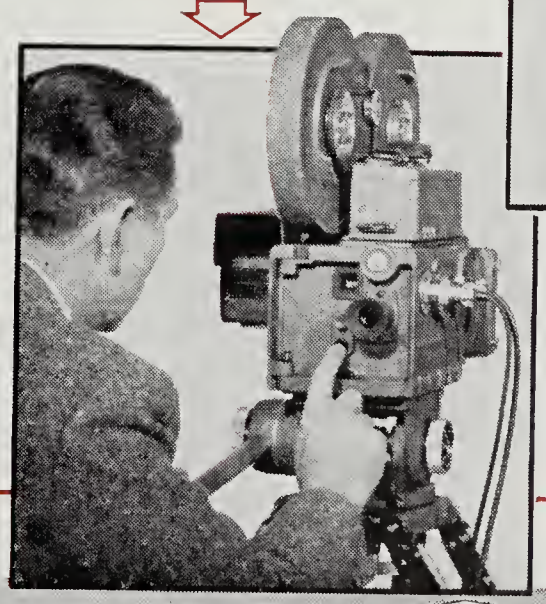
Preferred by PROFESSIONALS... THE ALL NEW "AURICON PRO-600" for 16mm optical sound-on-film

- ★ Self-blimped for completely quiet studio operation. The whisper-quiet film flow of The "Auricon Pro-600" is silent proof of precision design. Your sound-recording microphone never picks up "Pro-600" Camera noise!
- ★ 600 ft. film Magazines with Auricon-Electromatic Take-up, for 16 minutes of continuous "Talking-Picture" filming.
- ★ Synchronous Motor Drive for "Single-System" or "Double-System" Recording.
- ★ $1,497.00 list...for Auricon Pro-600 "Double-System" professional picture-camera with built-in features. Also available at added cost is "Single-System" equipment for Optical Sound-Track-On-Film, "C-mount" Lenses, View-Finders, Film Magazines, 3-Lens Turret, Critical Ground-Glass Focusing, Lens Sun-Shades, Tele-Finders, etc...
- ★ Sold with 30 day money-back guarantee, you must be satisfied!

Write for free illustrated "Auricon Pro-600" literature and price schedule.

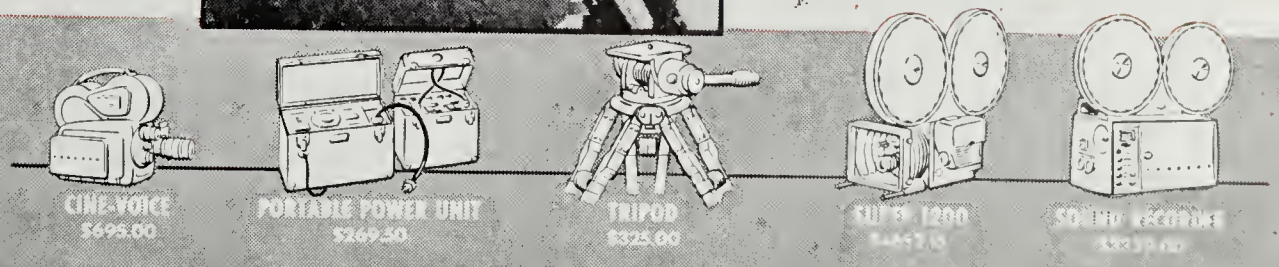
Auricon Hollywood

"Auricon Pro-600"
features Push-Button "On-Off,"
with safety-interlocked
film-flow mechanism.



"Auricon Pro-600"
Turret Model with
"Zoom" type Lens
and Finder in use.

Auricon Hollywood



Auricon Hollywood

Auricon

A PRODUCT OF

BERNDT-BACH, INC.

6902 Romaine Street, Hollywood 38, California

MANUFACTURERS OF SOUND-ON-FILM
RECORDING EQUIPMENT SINCE 1931

HOLLYWOOD BULLETIN BOARD

News briefs about the A.S.C. its members, and important industry personalities





American Society of Cinematographers celebrated the re-opening of its recently refurbushed clubhouse in Hollywood December 2, holding Open House for members and wives. Pictured are some of guests enjoying cocktails. In left photo (from L to R) are Mrs. Joseph Ruttenberg, Mrs. Victor Milner, Mrs. John Arnold, John Arnold, and Joseph Ruttenberg. Being greeted by flash-lamp-shy Mrs. Arthur Miller in next photo are Mr. and Mrs. Arthur Arling.







Renewing acquaintances at ASC's Open House are ASC past-president Arthur Miller, Mr. and Mrs. Eddie Fitzgerald, and Mr. and Mrs. Lester Shorr. In center photo, Ray Foster poses with his attractive wife. Right: ASC president George Folsey (R) chats with visitors Mr. and Mrs. Vaughan Shaner.



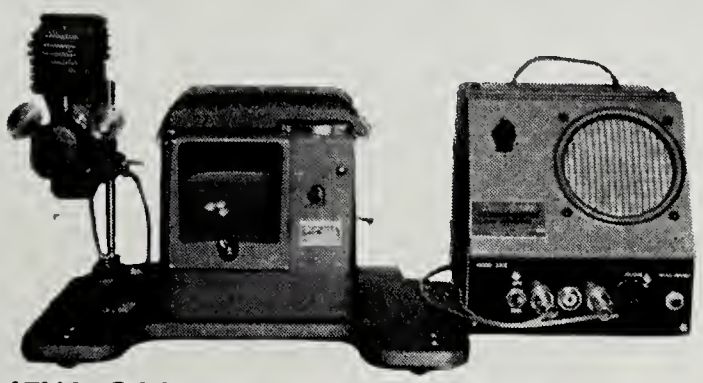




At special banquet last month, when ASC members were hosted by Consolidated Film Laboratories, Hollywood, George Folsey (L), president of ASC, presented cameraman Hal Rosson with Gold Membership card, commemorating 25 years membership in the Society. Center Photo: Edward O. Blackburn, V-Pres. of Wm. J. German, Inc., greeted ASC members in brief address. At his left is CFI V-P Sid Solow; at his right, George Folsey. Right Photo: Edgar Bergen, minus pal Charlie McCarthy, enlivened the program recounting his experience as a photographer.

Season's Greetings

To Our Friends The World Over



NEW CAMART DUAL SOUND READER

- Edit Single and double system 16mm or 35mm optical sound!
- Edit single system Magnastrlpe or double system magnetic sound.
- Use with any 16mm motion picture viewer to obtain perfect lip-sync matching of picture to track.
- Works from left to right or right to left.
- Magnetic Model **$185.00**
- Optical Model **$195.00**



WIDE-SCREEN SUPERAMA-16 LENS

A dual purpose anamorphic lens designed for both the taking and projection of regular 16mm motion pictures. Aspect ratio of 2.66 to 1.0 for extra wide pictures.

Superama—16 for silent projectors **$159.50**

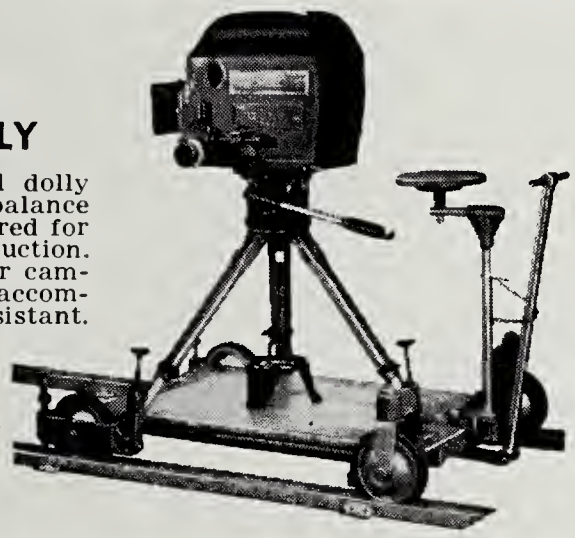
Superama—16 for sound projectors, specify make of projector **$169.50**

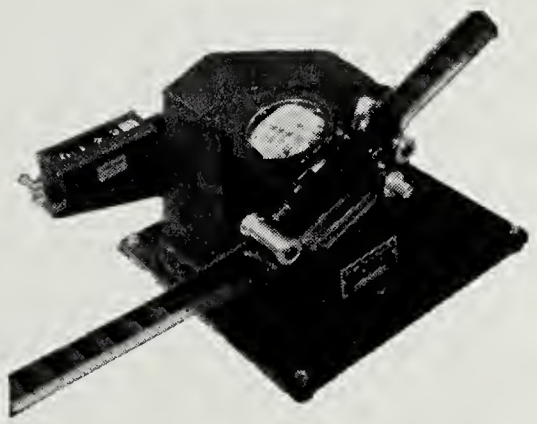
CAMART BABY DOLLY

Only a four-wheel dolly will provide the balance and stability required for professional production. Adjustable seat for cameraman; platform accomacommodates assistant.

$375.00

Dolly tracks available.





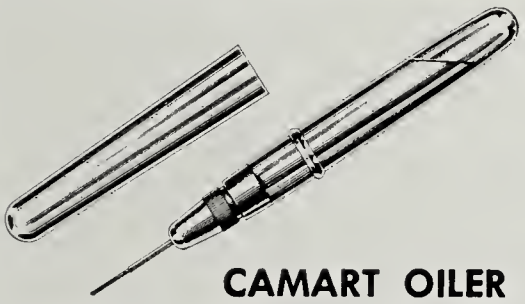
A. C. E. ROTARY VIEWER

Permits viewing of film between rewinds or backward —at rewind speed. The A. C. E. Film Viewer is especially designed to facilitate viewing original negative film without scratching.

A.C.E. ROTARY VIEWER **$159.50**

Footage and frame counter optional **$64.90**

Image Erector **$28.50**



CAMART OILER

Lubristyle precision oiler—Ideal for oiling equipment which is hard to get at. Press point of needle down on spot to be oiled and oil will flow freely. By releasing pressure oil flow is controlled. After pressure is released, surplus oil is sucked back into pen. Each **$1.69**

In quantities of six. Each **$1.39**



CAMART TIGHTWIND ADAPTER

Winds films smoothly and evenly without cinching or abrasions. Fits any 16mm or 35mm standard rewinds. The only tightwind with ball-bearing roller. With core adapter,

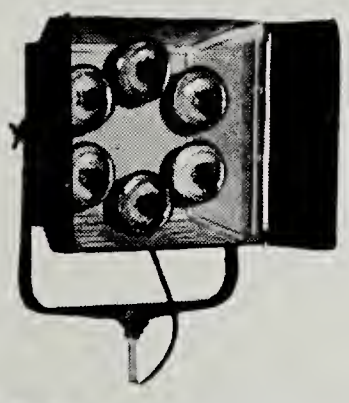
$29.00



MACO VIEWFINDER

Professional-type side viewfinder, with large, bright, erect image. For Cine-Special, Filmo, Bolex and Cine-Voice Cameras.

$139.50



REGAL LIGHTS

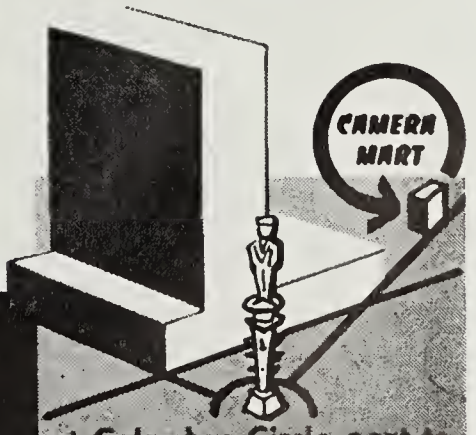
Now available in kit form. Two Model 600 heads, stands, converters WITH cases, **$255.00.** Two Model 400 heads, stands, converters WITH cases, **$200.00**



CAMART OPTICAL FX UNIT

For motion picture and television cameras. Reproduces multiple images in rotation. Many varied effects possible. From

$119.75



at Columbus Circle next to New York's new Coliseum

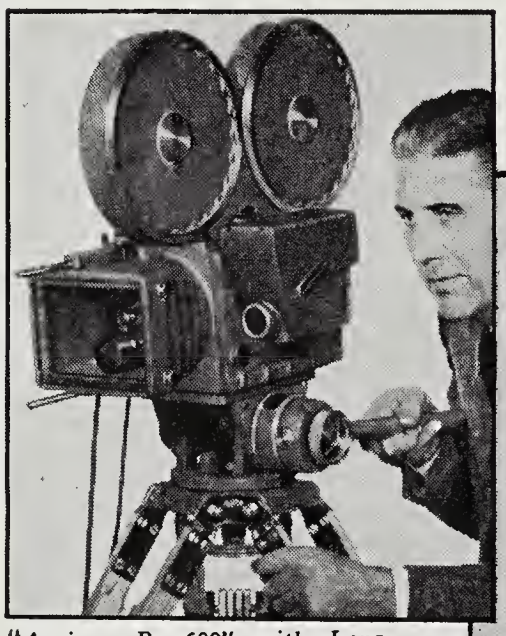
the CAMERA MART inc.

1845 BROADWAY (at 60th St.) NEW YORK 23 • PLaza 7-6977 • Cable: Cameramart

The One-Stop Source Of Supply

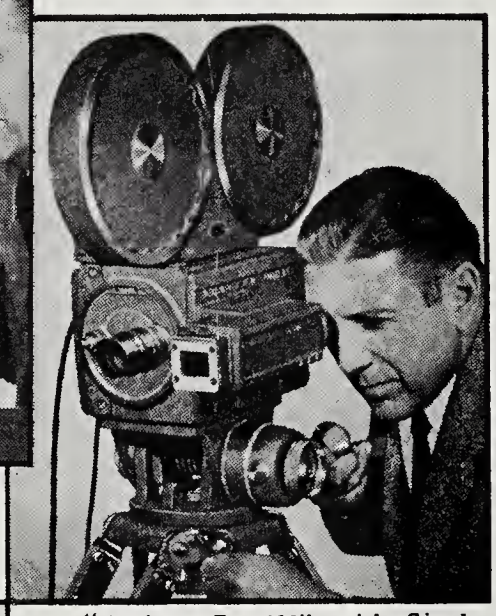
Chosen for the Filming of
Navy's South Pole Expedition
"Operation Deepfreeze"

AURICON PRO-600
for 16mm Optical Sound - On - Film

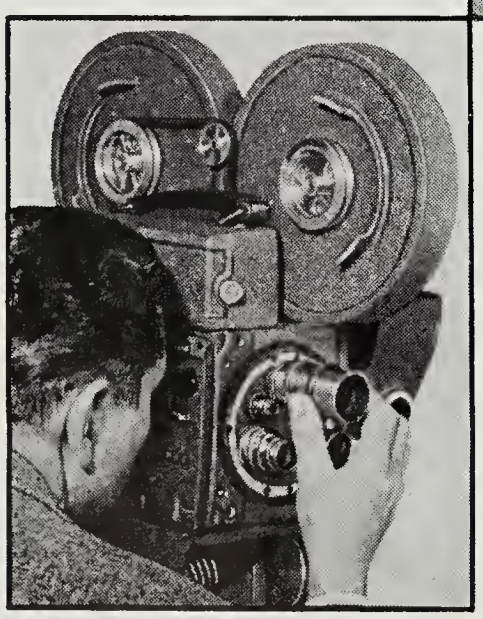


"Auricon Pro-600" with Lens Blimping Hood, Auto Parallax Finder with Magazine, Tripod

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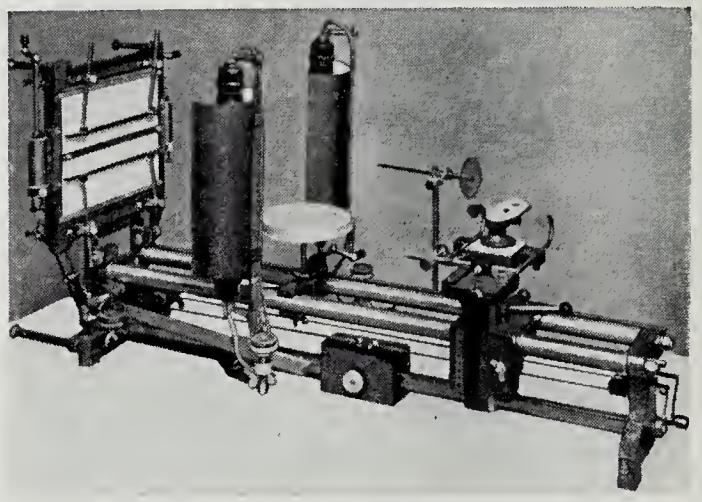
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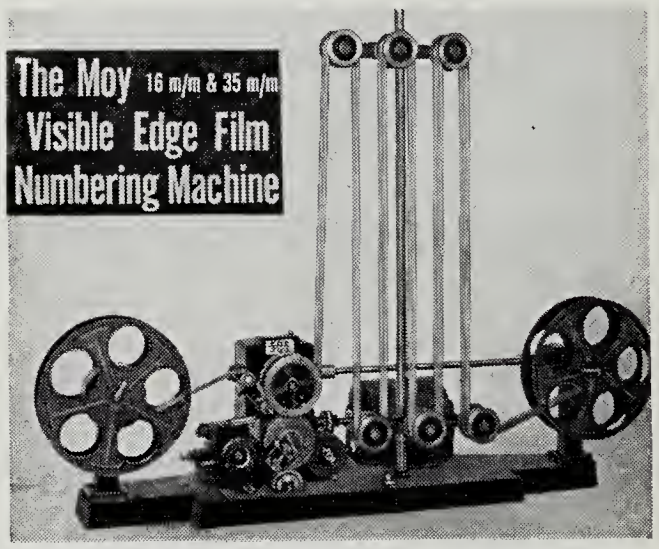
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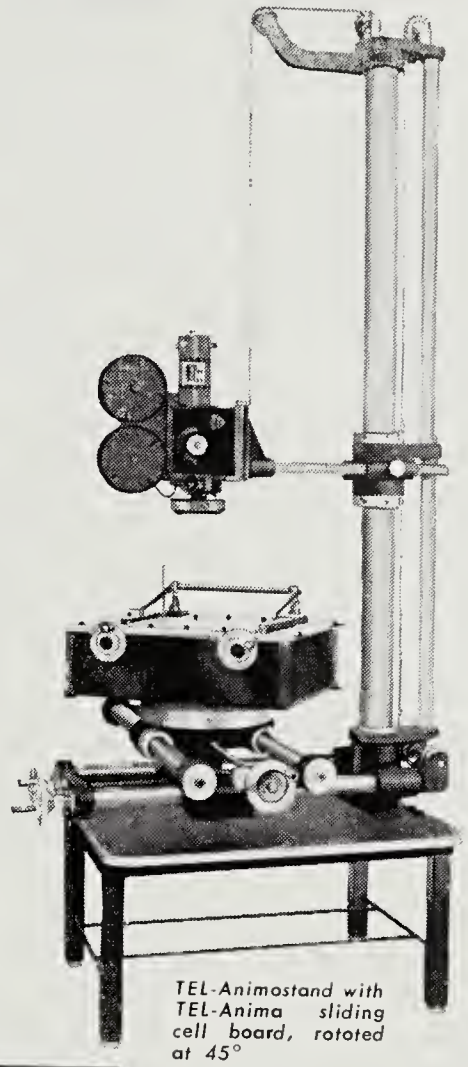
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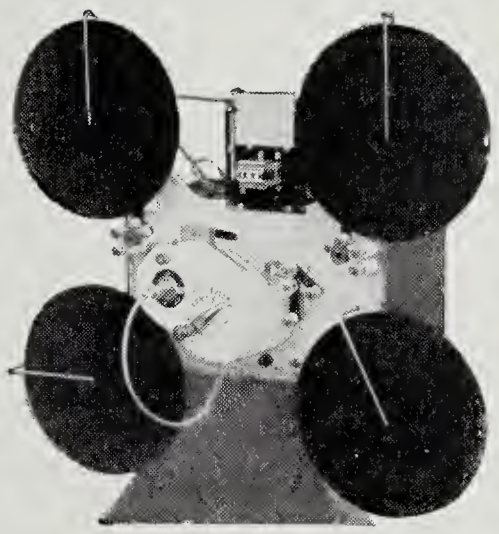
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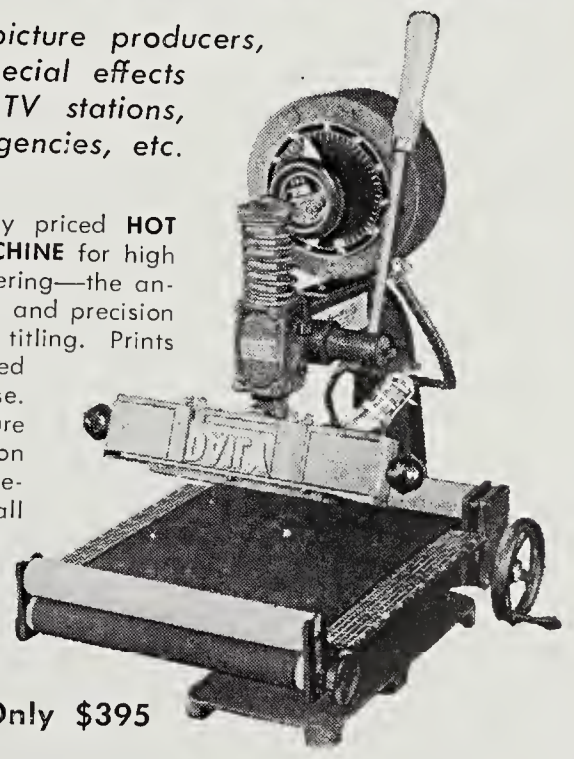
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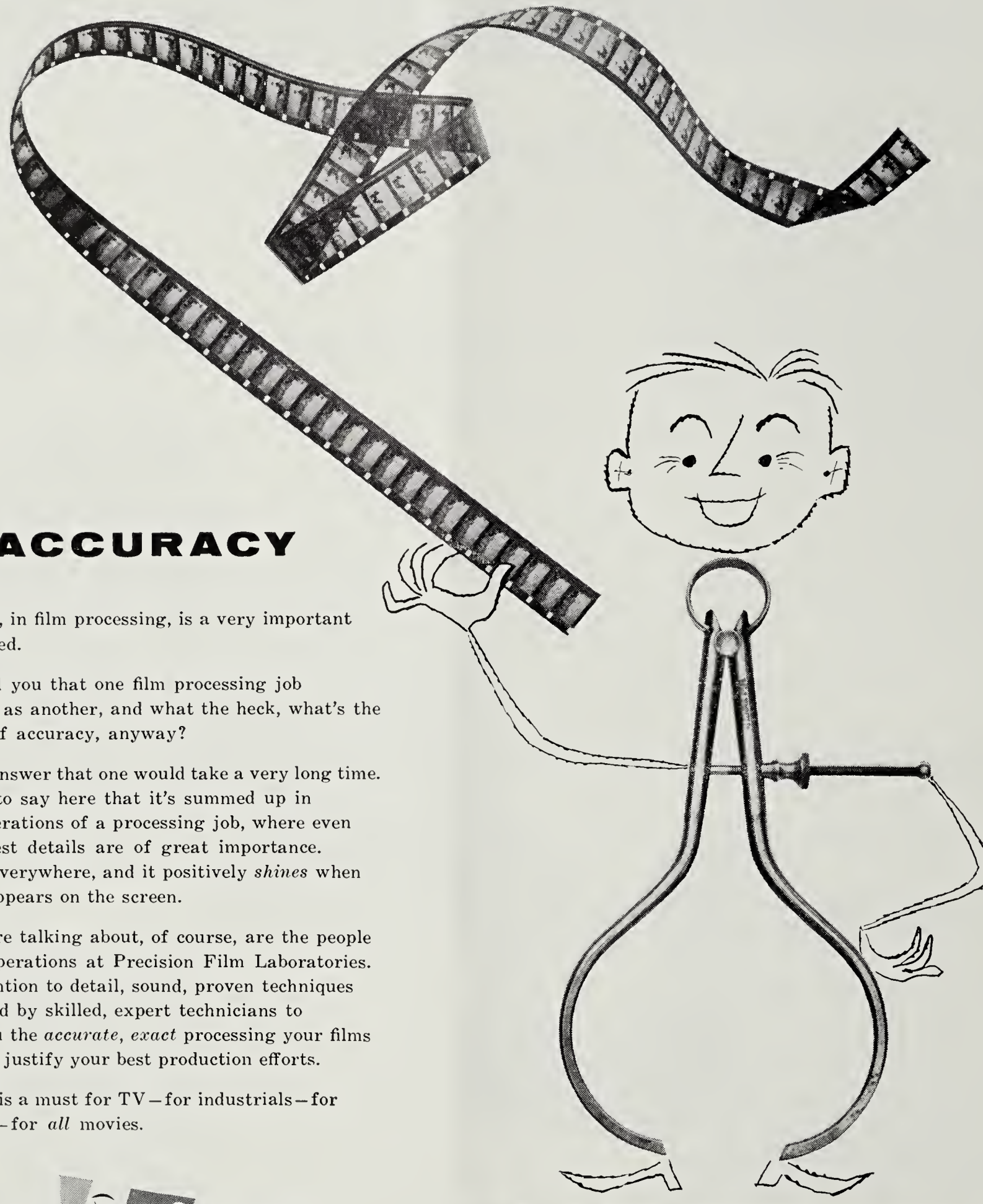
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TECHNICAL
QUESTIONS & ANSWERS



Conducted by Walter Strenge, A.S.C.

QUESTIONS relating to cinematography or other phases of film production are invited from readers and will be answered by letter by Walter Strenge or by other qualified members of the American Society of Cinematographers. Questions and answers considered of general interest will appear in this column.—*Ed.*

Q What is the procedure for producing artificial cloud effects, such as used in a heavenly scene of a recent Hollywood production. The clouds were maintained at low level, moving around the feet of the actors.—*M. B., Tehran, Iran.*

The production of special cloud, fog, and low-hanging mist effects in motion pictures is the work of a highly specialized group of men, and such effects are rather ambitious to be undertaken by the uninitiated, as they require a great deal of equipment to produce.

Containers, usually shallow pans, filled with oil are heated to produce smoke which is blown through tubes about six-inches in diameter to the set. At the end of each tube is a box containing dry ice which lowers temperature of the smoke causing it to flow close to the floor. Dampening the floor with water further aids in keeping the smoke at low level.

Some success may be had in small, confined areas by covering a piece of dry ice with a damp grass mat or heavy cloth such as burlap, and gently blowing the mist over the set with a fan.

Such effects are best produced on a set or in an enclosure free of drafts so that the consistency and direction of the smoke can be controlled by electric fans.

Sounds complicated? It is.—*Arthur Miller, A.S.C.*

Q For a 16mm black-and-white film I am making, I want to have white titles superimposed at the head over a live-action background. The film is being shot on negative.

If, in preparing my A and B rolls for print, the titles are black on white (as they would be in the negative stage), the white portion would print through so that the background on the other roll would not appear.

What alternatives are there for producing the white title text superimposed? —*A. F., New York, N. Y.*

It is possible to attain a white letter superimposed on a background through the process of negative-positive printing. It is necessary, however, to superimpose the title and print the background in one pass through the printing machine. This method is commonly used to superimpose English titles on foreign pictures.

Inasmuch as this operation is more costly than for a normal print, the use of a dupe negative is suggested, with the superimposition incorporated into one record of film for final release use. By using the first method the problems of title movement, proper synchronization of title over background, and of picking up dirt and dust particles on the additional record of the film, makes a clumsy and hazardous operation. However, it can be done.—*Ted Fogelman, Associate Member, A.S.C.*

Q I am underaking the compilation of a list of the perforation systems used for motion picture films. This will include the data on such systems as Fox-Grandeur, Military Standard, Bell & Howell, etc. Any data that you are able to supply will be appreciated.—M. R., *Burbank, Calif.*

Such information as you require we believe is available from the Society of Motion Picture and Television Engineers, 55 West 42nd Street, New York 36, N. Y., or the American Standards Association, 70 East 45th St., New York 17, N. Y.—*Emery Huse, Technical Editor, American Cinematographer.*

Q When using a combination of filters for a night effect, such as the 23A with a 56B, are the factors of both filters added or multiplied for the resultant to be used?—*B. D., New York, N. Y.*

It is assumed that by the expression, "resultant to be used," you mean the final exposure arrived at using the filter combination described.

Yes, with few exceptions, always multiply the two factors. In this case, using Eastman or DuPont panchromatic film, the factor of 4 (for the 23A) and of 5 for the 56B) gives a factor of 20.

Incidentally, the filter combination mentioned is considered one of the best. It is the nearest approach to what we call "spectral neutrality." — *Ellsworth Fredricks, A.S.C.*

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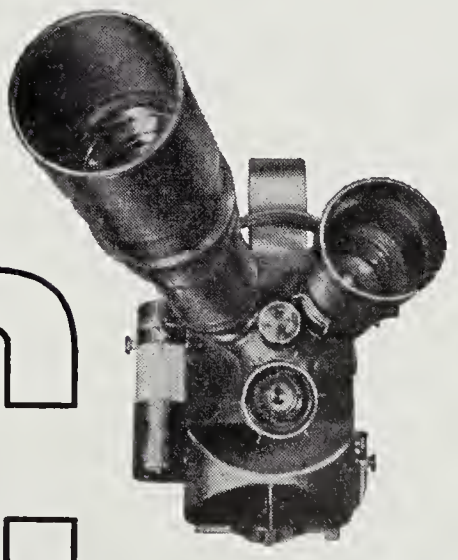
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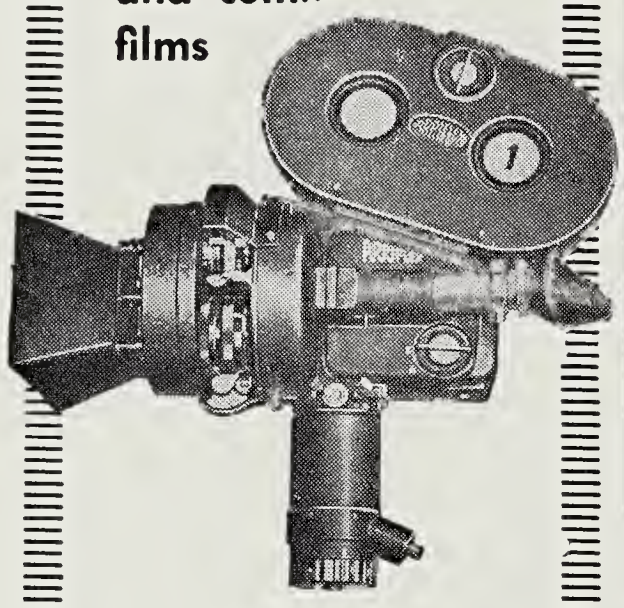
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Photographic Assignments

NOVEMBER • 1956

Who, where and what the industry's cameramen were shooting last month.

*Asterisks indicate television film productions.

ALLIED ARTISTS

• William Mellor, ASC, "Love in the Afternoon," (shooting in Paris) with Gary Cooper, Audrey Hepburn and Maurice Chevalier. Billy Wilder, producer-director.

• Floyd Crosby, ASC, "Attack of the Crab Monster," (Roger Corman Prod.) with Richard Garland and Pamela Duncan. Roger Corman, producer-director.

AMERICAN-INTERNATIONAL

• Fred West, ASC, "Voodoo Woman," (Carmel Prods.) with Marla English and Tom Conway. Edward Cahn, director.

AMERICAN NATIONAL

• Harold Wellman, ASC, "Adventures of Superman,"* (Superman Inc.) with George Reeves, Noel Neill, Jack Larson. Various directors.

• Bob Hoffman, "Dr. Christian,"* (Ziv-TV) with MacDonald Carey. Paul Gilfoyle, director; "Men of Annapolis,"* Ziv-TV). Various directors; "West Point,"* Ziv-TV). Norman Foster, director; "Highway Patrol,"* (Ziv-TV) with Broderick Crawford. Eddie Davis, director.

• Curt Fetters, "Highway Jatrol,"* Ziv-TV) with Broderick Crawford. Eddie Davis, director.

• Monroe Askins, "West Point,"* (Ziv-TV). James Sheldon, director; "Dr. Christian,"* (Ziv-TV) with MacDonald Carey. Herb Strock, director; "Highway Patrol,"* (Ziv-TV) with Broderick Crawford. Herb Strock, director.

BILTMORE STUDIOS (New York)

• J. Burgi Contner, ASC, "Street of Shadows," (Security Pictures for UA release) with George Montgomery and Geraldine Brooks. William Berke, producer-director.

CALIFORNIA STUDIOS

• Hal McAlpin, "O. Henry Playhouse,"* (Gross-Krasne, Inc.) with Thomas Mitchell. Peter Godfrey and Barney Girard, directors; "Dr. Hudson's Secret Journal,"* (Wesmor, Inc.) with John Howard. Peter Godfrey, director.

• Lucien Andriot, ASC, "The Life of Riley,"* with William Bendix. Abby Berlin, director.

• Lester Shorr, ASC, "Adventures of Hiram Holliday,"* (Gross-Krasne) with Wally Cox. Philip Rapp, director; "Matinee Theatre,"* (Gross-Krasne Inc.). Albert McCleery, director.

• Fred Gately, ASC, "The Rosemary Clooney Show,"* (Maysville Corp.) with Rosemary Clooney. Dick Darley, director.

CARTHAY SOUND STAGE

• William Whitley, ASC, "The Lone Ranger,"* with Clayton Moore and J. Silverheels. Earl Bellamy, director.

COLUMBIA

• Ted Moore, "Interpol," (Technicolor-Warwick Prods. shooting in Rome) with Victor Mature and Anita Ekberg. John Gilling, director.

• Bob Krasker, "The Story of Esther Costello," (Valiant Films, Ltd. shooting in London) with Joan Crawford and Rossano Brazzi. David Miller, director.

• Kit Carson, "Father Knows Best,"* (Screen Gems) with Robert Young and Jane Wyatt. Peter Tewksbury, director.

• Jack Hildyard, "The Bridge on the River Kwai," (Horizon-American Prods., shooting in Ceylon) with Jack Hawkins and Alec Guinness. David Lean, director.

• Ernest Haller, ASC, "The Cunning and the Haunted," (shooting in Georgia) with Sal Mineo and James Whitmore. Alfred Werker, director.

• Wilkie Cooper, "The Admirable Crichton," (London Films shooting in Bermuda) with Kenneth More and Diane Cilento. Lewis Gilbert, director.

• Gerald Gibbs, "Fortune is a Woman," (Launder-Gilliat Prod. shooting in London) with Jack Hawkins and Arlene Dahl. Sidney Gilliat, director.

• Basil Emmott, "Town on Trial" (Markman Films; shooting in London) with John Mills, Charles Coburn and Barbara Bates. John Guillerman, director.

• Joseph Biroc, ASC, "Garment Center," with Lee J. Cobb and Kerwin Mathews. Robert Aldrich, director.

• Hal Mohr, ASC, "George Sanders Mystery Theatre,"* (Screen Gems). Fletcher Markle, director.

• Benjamin Kline, ASC, "Zombies of Mora-Tua," with Allison Hayes and Gregg Palmer. Edward L. Cahn, director.

• Irving Lippman, "Twenty Million Miles to Earth," (Morningside Prods.) with William Hopper and Joan Taylor. Nathan I. Juran, director; "The Night The World Exploded," with Wm. Leslie and Kathryn Grant. Fred Sears, director; "Rin Tin Tin,"* with Lee Aaker and James Brown. Lew Landers, director.

• Henry Freulich, ASC, "The Young Rebels," with Peter Vaughn and Dorothy Green. David Rich, director.

• Ted Scaife, "The Bewitched," (shooting in London) with Dana Andrews. Jacques Tourneur, director.

• Bob Krasker, "The Golden Virgin," (Valiant Films shooting in London) with Joan Crawford and Rossano Brazzi. David Miller, director.

(Continued on Page 720)

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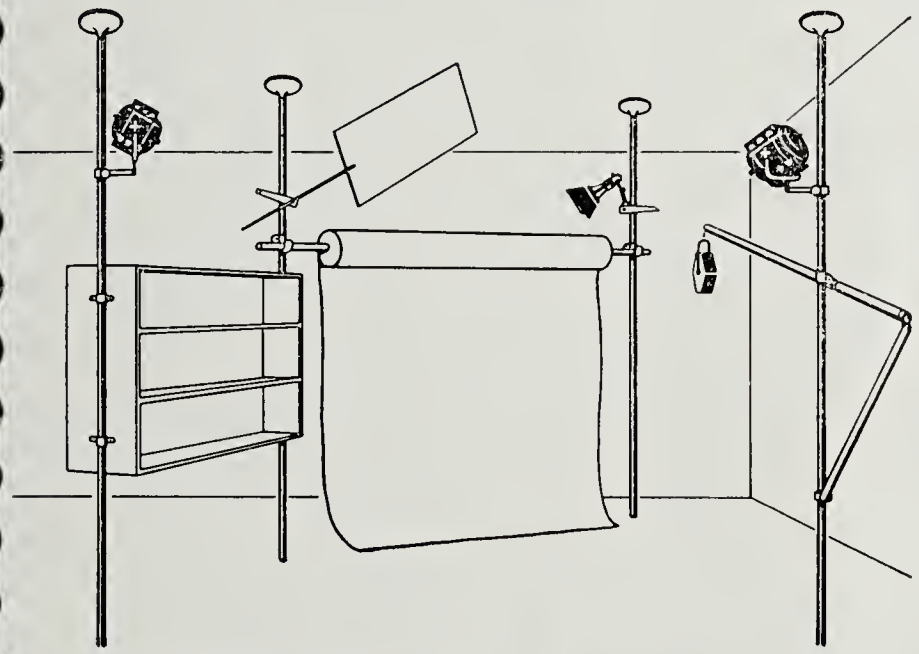
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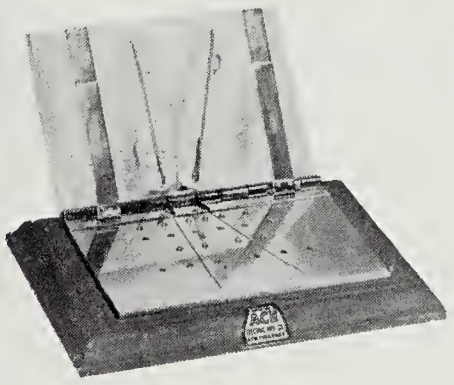
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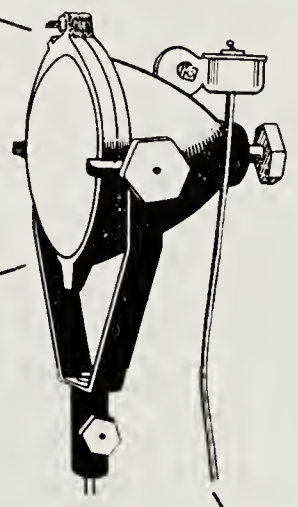
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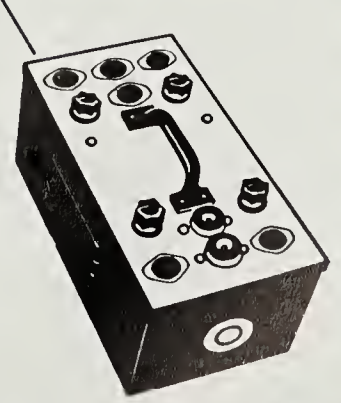
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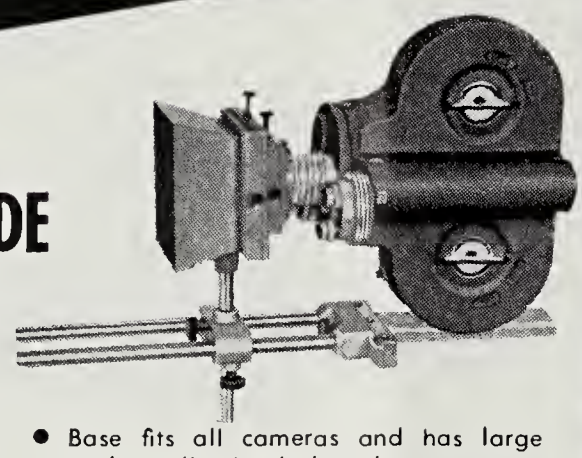
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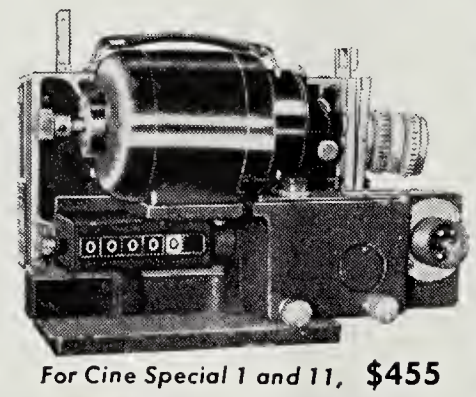
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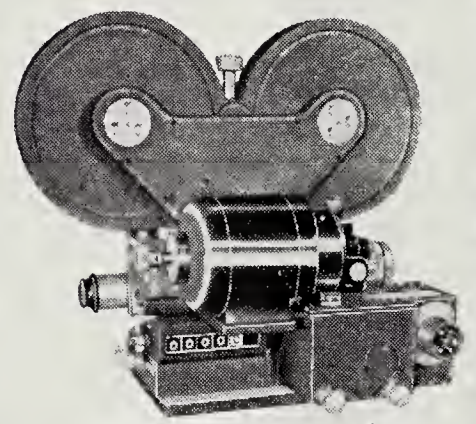
Synchronous motor unit, 115V, single phase, 60 cycle, assures even exposure from first to last frame. Available in 60 or 100 frames per minute units. Also available for 50 cycle.

Remote control switch box with forward and reverse, plus on or off switch. Solenoid fingertip actuater switch for single or multiple frame exposures. Outlet for foot or additional remote control switch.

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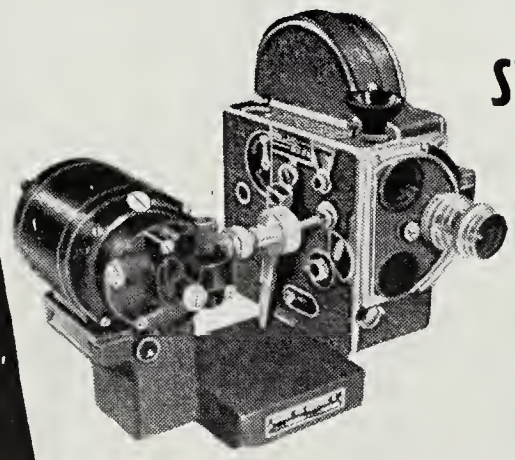
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PHOTOGRAPHIC ASSIGNMENTS

(Continued From Page 718)

• BURNETT GUFFEY, ASC, "The Brothers Rico," (Wm. Goetz Prod.) with Richard Conte and Dianne Foster. Phil Karlson, director; "Ford Theatre,"* (Screen Gems). Various directors.

• RAY CORY, ASC, "Rin Tin Tin,"* (Screen Gems) with Lee Aaker and James Brown. Lew Landers, director.

• GERT ANDERSEN, ASC, "Playhouse 90,"* (Screen Gems). John Brahm, director.

• FRED JACKMAN, Jr., "Circus Boy,"* (Screen Gems) with Mickey Braddock and Noah Beery. George Archinbaud, director; "77th Bengal Lancers,"* (Screen Gems) with Phil Carey. George Archinbaud, director.

• CHARLES LAWTON, ASC, "Ford Theatre,"* (Screen Gems). Various directors.

FILMCRAFT STUDIOS

• VIRGIL MILLER, ASC, "You Bet Your Life,"* (Filmcraft Prods.), with Groucho Marx. Robert Dwan, director.

FLYING "A" PRODUCTIONS

• WILLIAM BRADFORD, ASC, "Annie Oakley,"* with Gail Davis, Jimmy Hawkins and Brad Johnson. Ray Nazarro & Ross Lederman, directors.

FOX WESTERN AVENUE STUDIOS

• LLOYD AHERN, ASC, "T. C. F. Hour."* Various directors.

• CHARLES VAN ENGER, ASC, "Broken Arrow,"* with John Lupton. Various directors; Sunsweet Prunes commercial*. Derwin Abbe, director.

• GORDON AVIL, ASC, "Kaiser Aluminum commercial.* Derwin Abbe, director.

GENERAL SERVICE

• JAMES VAN TREES, ASC, "Burns & Allen Show,"* (McCadden Prods.) with Gracie Allen and George Burns. Rod Amateau, director; Carnation & B. F. Goodrich commercials.* Rod Amateau, director.

• HARRY WILD, ASC, "Bob Cummings Show,"* (Laurmac Prods.) with Bob Cummings and Rosemary DeCamp. Norman Tokar, director.

• PHILLIP TANNURA, ASC, "The People's Choice,"* (Norden Prods.) with Jackie Cooper and Pat Breslin. Jackie Cooper, director.

• NEAL BECKNER, "The Adventures of Ozzie and Harriet,"* (Stage 5 Prods.) with Ozzie, Harriet, David, and Rickey Nelson. Ozzie Nelson, director.

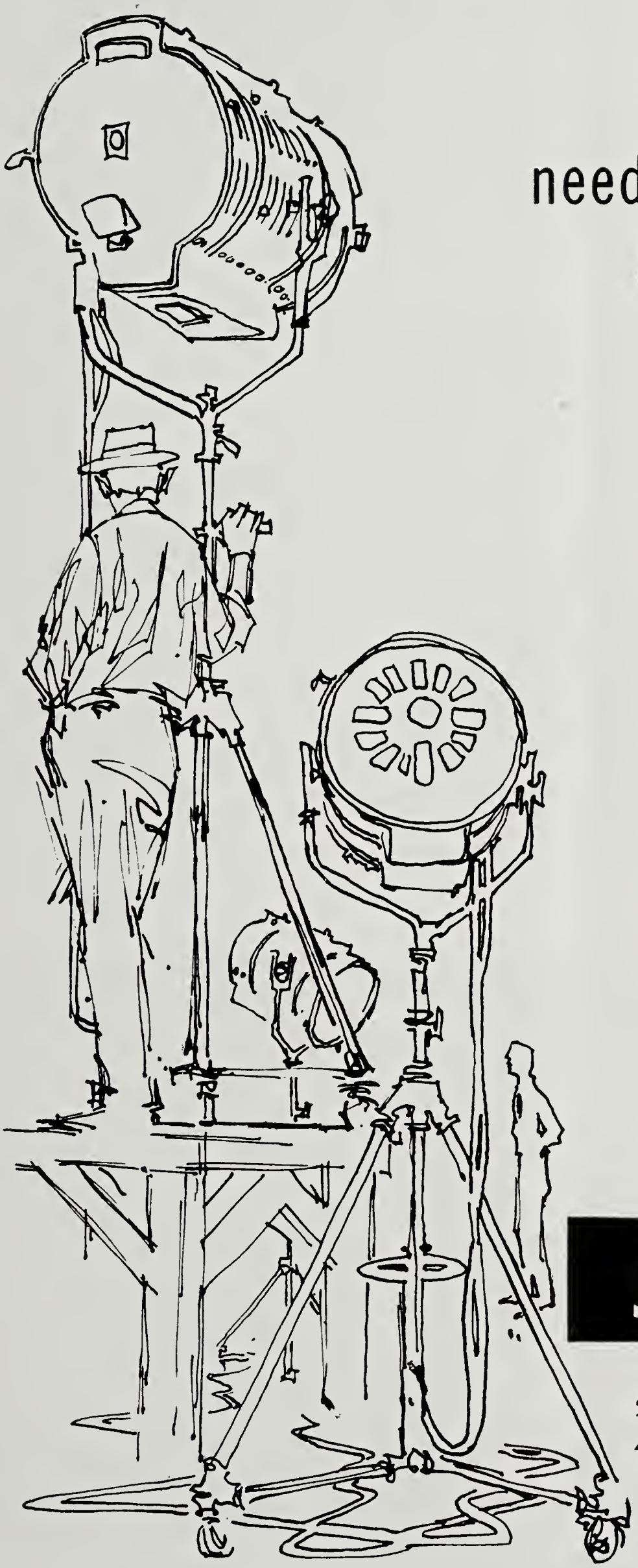
• FRANK PHILLIPS, "Navy Log,"* (Gallu Prods. Inc.), Oscar Rudolph.

GOLDWYN STUDIOS

• NORBERT BRODINE, ASC, "The Loretta Young Show."* (Lewislor Inc.,) with Loretta Young. Various directors.

• EDWARD FITZGERALD, ASC, "Crossroads,"* (Federal TV Inc.). Various directors.

(Continued on Page 748)



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Multiple Camera Control In TV Filming

The five cameras that photograph "People Are Funny" for TV are controlled by the director of photography from a central switching panel. The system not only cuts negative costs but affords greater freedom to Art Linkletter and his program participants.

By ALAN STENSVOLD, A.S.C.



ALL THE FREEDOM of a live TV show is afforded Art Linkletter (with microphone) through use of five remotely-controlled cameras in filming "People Are Funny." Cameras are strategically located to cover any action anywhere on stage or in the audience.

THE ART LINKLETTER television show, "People Are Funny," is one of several originating in Hollywood which are recorded on film as they unfold before a live audience. Five Mitchell 35mm cameras are employed in filming the Linkletter show and the edited result is televised to the nation's video audience several weeks later over the NBC network.

While this TV show is not the only one filmed with multiple cameras, it is the only one so recorded where control of each camera is maintained throughout the show by the director of photography. Making this possible is a camera sync control board from which power for each of the camera motors is switched on or off as desired, and signals are relayed to the various camera operators indicating the type of shot desired as filming of the show progresses. Thus is



AS EACH camera is started, cue light shown here in hand of assistant cameraman, flashes a sync mark on the picture film to aid cutter in matching picture with sound track.



ALAN STENSVOLD, A.S.C., (center) who directs photography of show, explains operation of signal lights to Art Linkletter. At left is John Guedel, producer of "People Are Funny," at Stensvold's left, director Irv Atkins.

provided what is probably the nearest approach yet to automation in cinematography.

Two important production factors led to design and construction of the camera panel: 1) it enables me as director of photography to exercise complete control of the pictorial recording of the show; and 2) it enables us to effect substantial savings in negative costs by running the various cameras only when they are recording usable takes, instead of having all cameras run continuously, as is the case with some other multiple camera systems. We have thus been successful in reducing the show's weekly consumption of negative from an average 22,000 feet to an average of 16,000 feet—a saving that not only includes film cost, but also the cost of handling the film, and developing and printing. We use the new DuPont No. 4 negative, which has given us excellent results.

For those who are not familiar with "People Are Funny," it is what we call a "stunt" show in which people chosen from the audience become competitors, undertake amusing and sometimes embarrassing tasks to win cash or merchandise, and otherwise prove that "people are funny." This format makes it necessary to photograph the show in much the same manner as in live television, with the cameras covering the activities continuously from various angles. The show is filmed each Tuesday evening at the Linkletter Playhouse on Vine street in Hollywood.

Five Mitchell 35mm cameras, augmented by a standby (making six in all) photograph the show, under the control previously mentioned. Looking at the cameras from the back of the theatre auditorium, No. 1, mounted on a crab dolly, is on the stage at the left. No. 2 is the standby camera, mounted on a tripod, and ready to takeover should any one of the other five cameras develop trouble during filming. No. 3 and 4 cameras are mounted on a parallel erected in the middle center of the auditorium, over the heads of the audience. No. 5 is the floating camera, mounted on a hydraulic dolly, and situated in the orchestra pit. And No. 6, mounted on a crab dolly, operates from the right hand side of the stage.

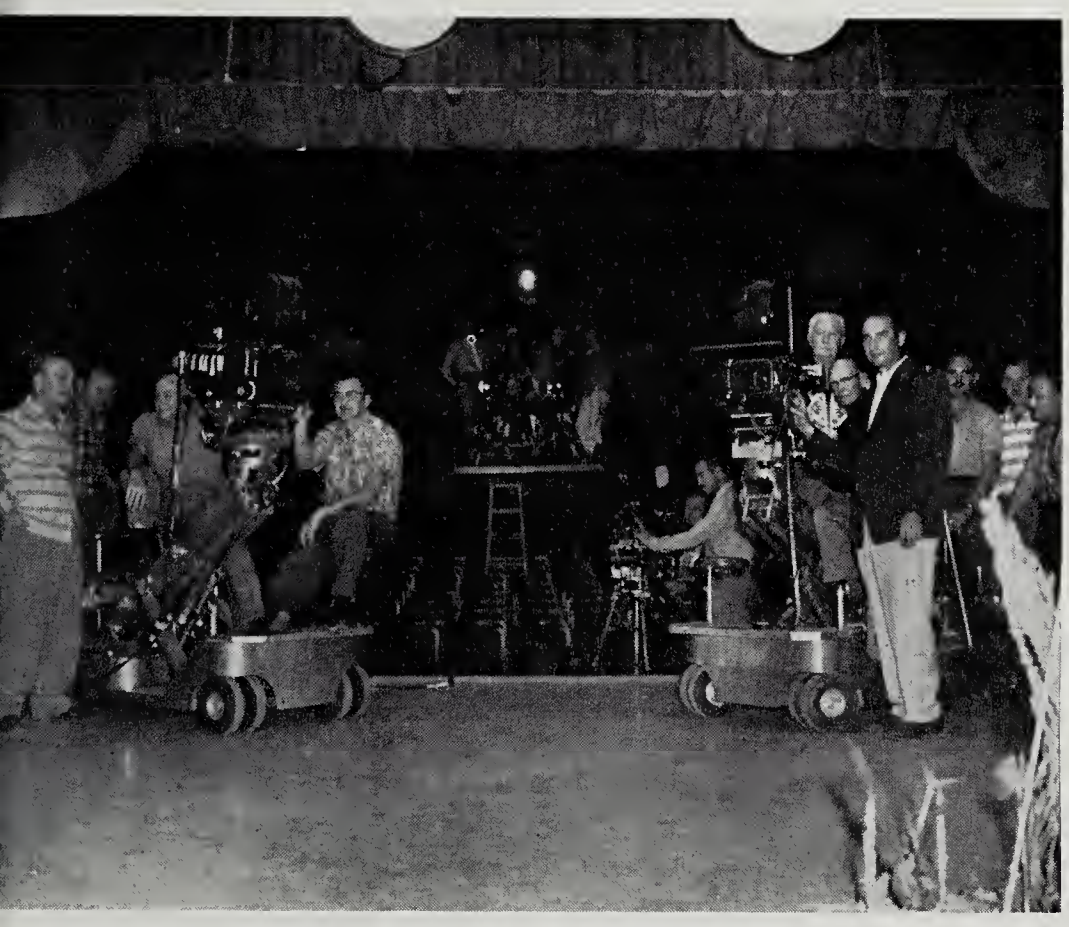
In the beginning, we used only four cameras. I believed that we could gain additional flexibility and thereby cut down further on the amount of negative required by adding the fifth. This we did and effected a savings in production costs of $240 per show. But the money saving was only a minor factor. The added flexibility the fifth camera gave us now permits the continuous filming of stunts running as long as twenty minutes. Each camera starts out with a 1000-foot film load, and by juggling between the different cameras—starting and stopping so as to spread out the available film during the shooting of each stunt—we can cover an incredibly lengthy piece of action before having to reload the cameras.

The camera sync control unit is located in a glass-windowed booth at the rear of the theatre, from where I observe the show as it progresses and direct the operation of the various cameras. Referring to the photo of the unit on this page, the reader may observe the switches and indicator lights which control the various cameras. On top of the panel are five electronic footage counters which show the amount of film in each camera at any time. When a camera is switched on, the footage counter automatically starts to record, and ceases when the camera is stopped. In this way I can observe the film supply remaining in any and all cameras and, when any camera begins to run low, determine what camera to switch on in its place. Magazines are never reloaded until after the filming of a stunt ends, at which time a brief intermission takes place for this purpose.

In addition to providing me with the means of starting and stopping the cameras, the panel also has switches and indicator lights which enable me to signal each of the camera operators whenever I wish a change made in a camera position or a lens. Mounted above the viewfinder of each of the cameras is a small box having three signal lights—red, green and yellow—which are observable by the operator, his assistant, and the grip at all times from their positions behind the camera.

The red light flashes on whenever I throw the switch that starts the camera motor, and remains on as long as the camera is turning. When I flash the green light, this indicates to get in closer to subject or subjects being filmed, either by dollying in or switching to a different lens. When I flash the green light twice, it means to go into a two-shot. Any good operator, of course,

(Continued on Page 744)



APPROXIMATE WORKING positions of the five Mitchell 35mm cameras used in filming "People Are Funny" are shown here. Cameras are switched on and off by Stensvold who directs photography from booth at rear of playhouse.



CAMERA SYNC CONTROL panel, designed and built by Alan Stensvold especially for Art Linkletter TV show, enables him to stop and start camera and signal for camera and lens changes.

Filming "12 Angry Men" On A Single Set

Carefully planned lighting and camera angles played an important part in giving impact and suspense to the drama of 12 men deciding the fate of one man in the confines of a small, hot jury room.

By BORIS KAUFMAN, A.S.C.



A MAJOR problem was how to prevent the photography from becoming static, since the entire story was staged and shot on a set no larger than an average hotel room.

BELOW—Changing the set lighting to conform with the time of day played a big part pictorially in motivating the story. Here, as tension mounts between the men, a thunderstorm approaches, changing the aspect and mood of the lighting in the room.

THE EVER-PRESENT challenge for the director of photography is how to give each new picture a new and different camera treatment—a fresh viewpoint, camera-wise. Lest he repeat himself and fall back on old techniques, the cinematographer is continually challenged to dig deep into his bag of tricks so that his photographic technique does not become stagnant.

Sometimes an assignment is filled with more problems and difficulties than others, as in the case of "12 Angry Men," which I recently photographed for Orion-Nova Productions in New York. Just one look at the script convinced me that here was truly a challenging assignment—photographing a dramatic story within the confines of a single, one room set.

The story concerned twelve men who, as jurors, find themselves locked inside a jury room where they must decide whether a young boy, on trial for his life, is to live or die. Considering the one-set limitations, the first and most important problem was how to keep the photography of this picture from becoming static; the entire story was to be staged and photographed in a room no larger than an average hotel room.

The second problem was how to present cinematographically the psychological study of twelve men, each from a different social strata of a big city and



whose only common denominator was that he had suddenly found himself in a jury room, and was being asked to pass judgment on the guilt of another human being.

The first problem presented the biggest challenge. I had experienced this type of a problem before in one or two pictures, but in a much more fleeting way—for perhaps a sequence or two. But here the entire story was straightjacketed inside a one-room set. Inside a jury room, in which sat twelve men, whose backgrounds, attitudes, problems, and reasons behind their decisions had to be shown photographically as well as in the dialogue.

After much thought and discussion, we decided there was only one way to overcome the possibility of static cinematography. That was to turn the disadvantage of the single set into a pictorial advantage. We decided to use the camera to play up the feeling of confinement and thus contribute dramatically to the total expression of the story, making the confinement an integral pictorial part of the mood.

In good cinematography the camera should never distract the audience from the basic theme and never move without justification. And yet the static condition inherent in the one-set limitations of this story had to be overcome.

The camera had to reveal at the outset the basic character of each man, and his personality traits had to be elaborated upon later in the film to reveal the inner psychological reasons for his behavior.

Because of this the opening scene was the longest, single continuous take I have ever done in all my years as a cinematographer. It ran for seven consecutive minutes. It was made up of 18 separate camera movements which actually showed 18 basic fact situations. It also established the basic style and mood of the picture.

During this seven-minute take the camera introduces the twelve men in a very casual way as they bump into each other and exchange casual remarks which are not at all related to the case on trial. Yet in this way each character immediately begins to relate to every other man in the room and to the story.

From the moment the foreman calls for the first vote we are caught up in a tight, tense drama which never breaks until the end of the film. The screening time is exactly equal to the actual time depicted in the story. Thus, in the hour and one-half the jury spends in the jury room it was impossible to break away from the continuity of the story, to flash back, or attempt a time-lapse. There was nothing for the camera to do except to show one direct continuing story carried further and further along inside the small, hot, locked room.

This picture was shot only one way, to be edited only one way. We didn't "protect" ourselves in the usual way, but decided on the spot how the sequence was to be shot.

Therefore, each angle was checked to determine the best composition with respect to the visual impression we were seeking, and to the action involved. So that when it came time to roll the camera, everybody concerned knew exactly what they were going to do.

The directing technique employed stemmed to a great degree from Sidney Lumet's television background—where, because you are only allowed one take during the actual show, everything is ironed out during rehearsal. Which, when you have as fine and sensitive a feel for camera-work as Lumet, plus his talent and memory for details, combined with a tight script by Reginald Rose, and sensitive performers like Henry Fonda, Lee J. Cobb, Jack Warden, and others in the cast, can prove to be a very successful method of filming a motion picture.

There was another pictorial technique we used to emphasize changes in the mood of the story and in the interlocking themes of the plot. This was in the basic lighting patterns, three in all.

First, the lighting suggests bright daylight as the hot afternoon sun shines through the windows as the jury files into the room.

The second stage is reached when the action in the room becomes tight and charged with the oppressive heat of the summer day; the camera moves in again and again to show the tense, electric undercurrents related to the drama going on between the men of the jury. This effect is then heightened by darkening skies in the background, a sudden darkness in the room, and the sound of thunder off in the distance.

And finally, the pictorial effect of a rainstorm which pours down on the city, and breaks the tension within the room at the height of the emotional battle that has been going on for over an hour and a half. The camera makes the most of the effect of the sight and sound of rain beating against windowpanes, raising the tension of the jurors to the highest point as the last of them finally admits there is room for doubt. The storm breaks only after the jurors' fateful decision has been made.

As we cut to the exterior of the Courthouse, with a wet column heavy in the foreground, the men of the jury disperse into the city and the anonymity of the crowd with nothing more to remind us of the drama that took place behind the closed doors of the jury room. Except the coming of night and the wet pavement as the "12 Angry Men" fade into darkness. **END**

CAST & CREDITS
"12 Angry Men"

HENRY FONDA
LEE J. COBB ED BEGLEY
E. G. MARSHALL
JACK WARDEN
Jack Klugman Joseph Sweeney
Martin Balsam George Voskovec
Robert Webber Edward Binns John Fiedler

Produced by *HENRY FONDA*
Associate Producer *REGINALD ROSE*
Directed by *SIDNEY LUMET*
Production Supervisor *GEORGE JUSTIN*
Story and Screenplay *REGINALD ROSE*
Director of Photography *BORIS KAUFMAN*
Art Director *Robert Markell*
Film Editor *Carl Lerner*
Assistont Director *Donald Kranze*
Comera Operator *Saul Midwall*
Sound Engineer *James A. Gleason*

An Orion-Nova Production



UNDER THE very limited filming conditions encountered, the shooting script could only suggest camera procedure; each setup and camera angle was carefully thought out by cinematographer Kaufman (left) and director Sidney Lumet before the scene was shot.



THE UNIVERSITY shoots many productions with its "multicam" system. Here, two cameras are used—an Auricon-Pro and a Cine Special in a student-made blimp (2nd camera from left in photo). Both run continuously during a take and provide two different aspects of the action for editing and intercutting. Tri-X film is used at a stop of f/8.

Film Production At The State University Of Iowa

By STANLEY E. NELSON and JOHN MERCER

(Continued from the October issue)

IN THE PRECEDING article, the authors described the scope of activity of the State University of Iowa in producing motion picture films. The University also conducts classes in cinematography and film production. In the first semester, the authors related, lectures cover 21 different phases of film production, equipment and procedures. Second semester is devoted to film planning, script writing, directing and cinematography. In the concluding article, this phase of the University's activity is described at greater length. ED.

SYLLABI FOR THE COURSES have been developed by John Mercer. These syllabi are available from University Campus Stores only to students registered in the courses or to persons who request them through Mercer. This is a matter of University policy, aimed at insuring a supply of material for the students. Persons who wish to purchase the syllabi (they are sold on a non-profit basis) can usually obtain copies by writing to John Mercer at the Television Center.

The Television Center has always produced film clips for its productions, along with some program-length or near program-length sound footage. For general production work we have a Cine Kodak-Special, an Auricon-Pro, Stancil-Hoffman S-5 magnetic film recorder, Magnecorder, Moviola Model UL-20-S, and two editing tables.

We are going full speed ahead on multicam. We use two cameras, one an Auricon-Pro and the other a blimped Cine Kodak-Special, both running continuously during a take. We have found that by using Tri-X film at Weston 400 we can stop down to f/8 in our studio. This gives us great depth of field and eliminates the necessity for following focus in most cases. We can shoot only five minutes at a time, and must reload and reslate for each roll.

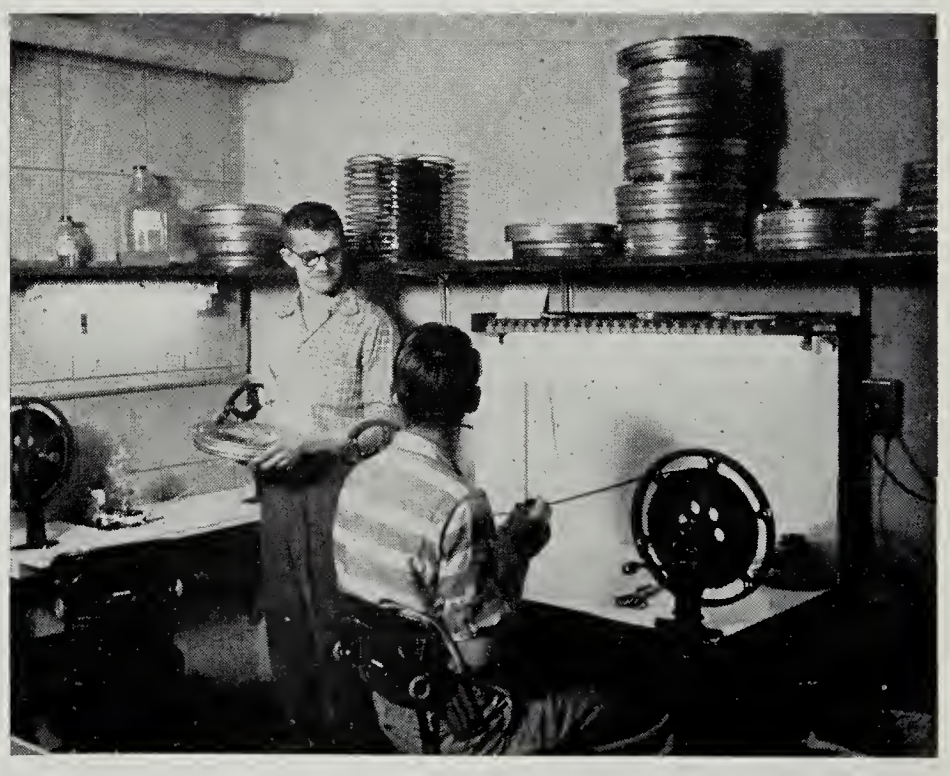
Selected students occasionally produce short sound films for workshop credit. We have recently produced a film on archaelogoy and a puppet film.

We also use Bell & Howell 70-D series cameras equipped with wide-angle, 1-inch, and 2-inch lenses. For our studio we have a room which measures 47x33x30 feet, with three permanent sets built of ten-foot flats. We have several different kinds of lighting equip-

(Continued on Page 746)



SELECTED STUDENTS occasionally produce short sound films for workshop credit. Here a Bell & Howell 70-DA camera is being used on a dolly-mounted tripod on a studio set.



STUDENTS HAVE access to six film editing tables; each is equipped with splicer, rewinds, viewer, film bin, light box, scissors and film cement. Other equipment is available for 35mm.

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FIG. 1—Simple setup for photographing TV spots and commercials with superimpositions and other effects combined in a single take, such as illustrated in Fig. 3 below.

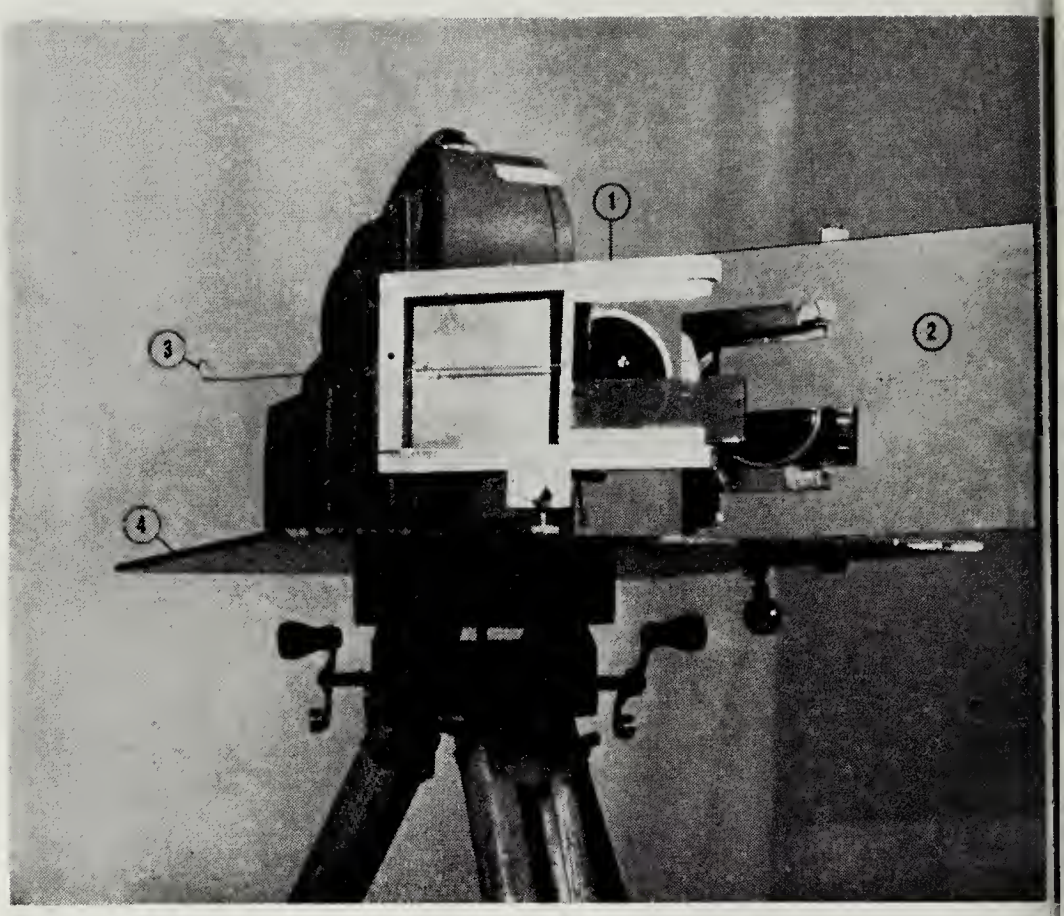


FIG. 2—Twin mirror device for making effects in the camera. By sliding mirror (1) before lens, direct view is cut off and image to be superimposed is picked up by lens, as reflected by mirror (2). Gadget is mounted on base plate (4).

IT'S DONE WITH MIRRORS

Simple gadget makes it possible to produce smart, semi-animated TV spots or commercials in a matter of hours without need for costly optical printing.

By R. C. HORN

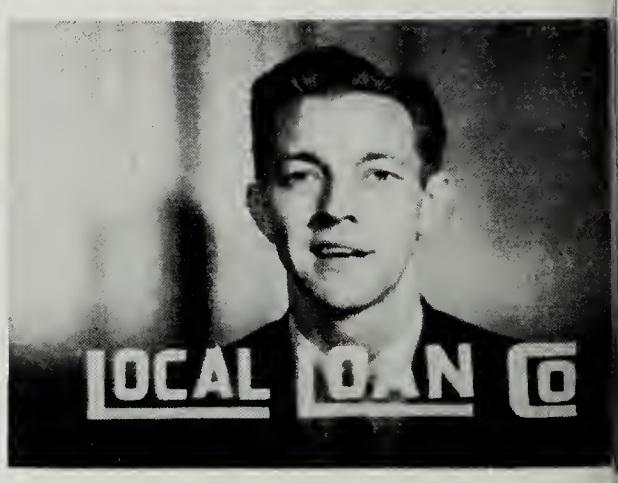
Tele-Film Company. Spokane. Wash.

ONE OF THE vexing problems encountered by many film producers catering to TV advertisers is the high costs involved in making effective film commercials on the pin-money budgets of the average small-market video advertiser.

A television commercial or spot announcement must pack a tremendous amount of selling within its alloted time; every *fraction* of a second of the air time must be utilized to the limit.







For this reason special photographic effects are being employed more and more in TV commercials to put the greatest amount of message on the limited amount of film. Thus action or visual information is often dissolved or overlapped to further reduce the time required to put the message across—something that usually requires costly special laboratory treatment in the production of the film.

Here is a tried and proven method of producing TV commercials having modern professional effects, at a cost so small even the low-budget advertiser can profitably use them. While the method has its limitations, it is applicable to a wide range of local spot announcements and commercials; and the investment necessary for the film producer who would employ it is nominal, indeed. For the essential equipment necessary is a sound camera and a simple gadget employing mirrors that any cameraman handy with tools can rig up in a very short time.

The 16mm frame enlargements reproduced at the bottom of these pages illustrate a TV commercial produced with the mirror device, which is shown in Figure 2. The example is a typical low-budget commercial having all the class of a professional job turned out by means of special optical effects printing. The word "Money" and the name of the Loan company is introduced in the opening frames with narration over. Then the speaking narrator appears in a wipe-on effect as the word "Money" is wiped off and the name "Local Loan Co." is superimposed.

Attention is called to the diagram (Fig. 4, on this page) which shows positions of the two mirror units with respect to the camera and the subjects being filmed, as seen from above.

Figure 1 shows the single camera setup employed in filming the entire commercial in one take. Here the mirrors are in position, as shown in Fig. 4, causing the text on the black card to be recorded by the camera lens. As the operator moves the larger mirror of Unit A (Fig. 4) to the right, the text disappears in a wipe-off effect revealing the announcer. With the mirror removed from in front of the lens, it no longer reflects the image from the card, and the camera picks up the announcer direct, where he is seated in the position indicated as "Scene #1" in Fig. 4. A second mirror of reduced size is then moved to the left and picks up only the name of the sponsor, causing this part of the text to be superimposed over the announcer. Then the sectional mirror is moved to wipe off the sponsor's name, the card changed, and the sectional mirror moved back again to reflect in the lower region of the scene the sponsor's address. Producing these same effects by standard lab printing procedure might very well have made the commercial a profitless venture for the producer.

The effects device illustrated and described here was designed for use with an Auricon Cine-Voice camera fitted with a Pan-Cinor zoom lens. It makes it possible to cut from one scene to another with the camera without stopping it, or without moving or panning it in any way. It is only necessary to move one of the sliding mirrors into position in front of the lens, and a smooth, clean transition results.

In actual practice the effect has been accomplished in as little as three frames and can be as fast or as slow as desired. With this mirror unit it is possible to produce film commercials with continuous sound tracks and many changes of scenes without stopping the camera.

The mirror unit "A" (Fig. 4) contains slots for two mirrors, which are easily removed and interchanged during filming. One mirror is large enough to accept the full field of the widest angle lens used. The second mirror is cut to reflect only the lower ⅓ of the field.

These mirrors are mounted in brass frames to allow free and easy movement in the channels of mirror unit "A". Exact sizes are given to cover the field of the Pan-Cinor 17mm to 70mm lens; however, size of the unit could be reduced where lenses of smaller diameter are to be used.

As may be seen in the diagram, if the mirror in unit "A" is moved into the field in front of the camera lens it will reflect the scene picked up by mirror "B". This mirror is movable on a vertical axis and its angle may be adjusted to accept an entirely different scene from that of the unobstructed lens.

By moving the mirror into position in front of the lens, scene #1 will be wiped off and scene #2 will be wiped on simultaneously. Having blocked out scene #1, it is then possible to change this scene and, when called for, return to it by moving the mirror back out of the field of the lens.

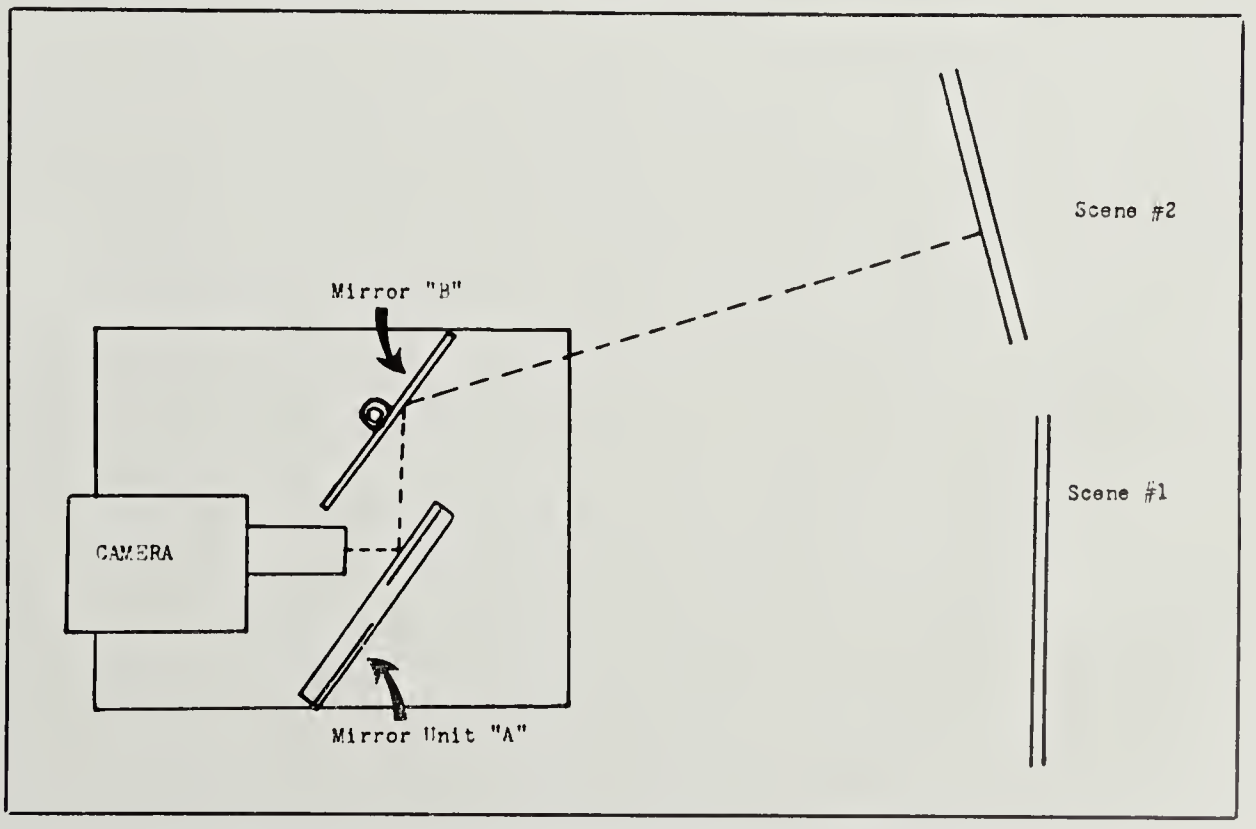
If it is desired to superimpose lettering onto a scene, a "two-way" mirror may be used in the same manner. The lettering to be superimposed will be at scene #2 and the main subject at scene #1. The use of a two-way mirror to

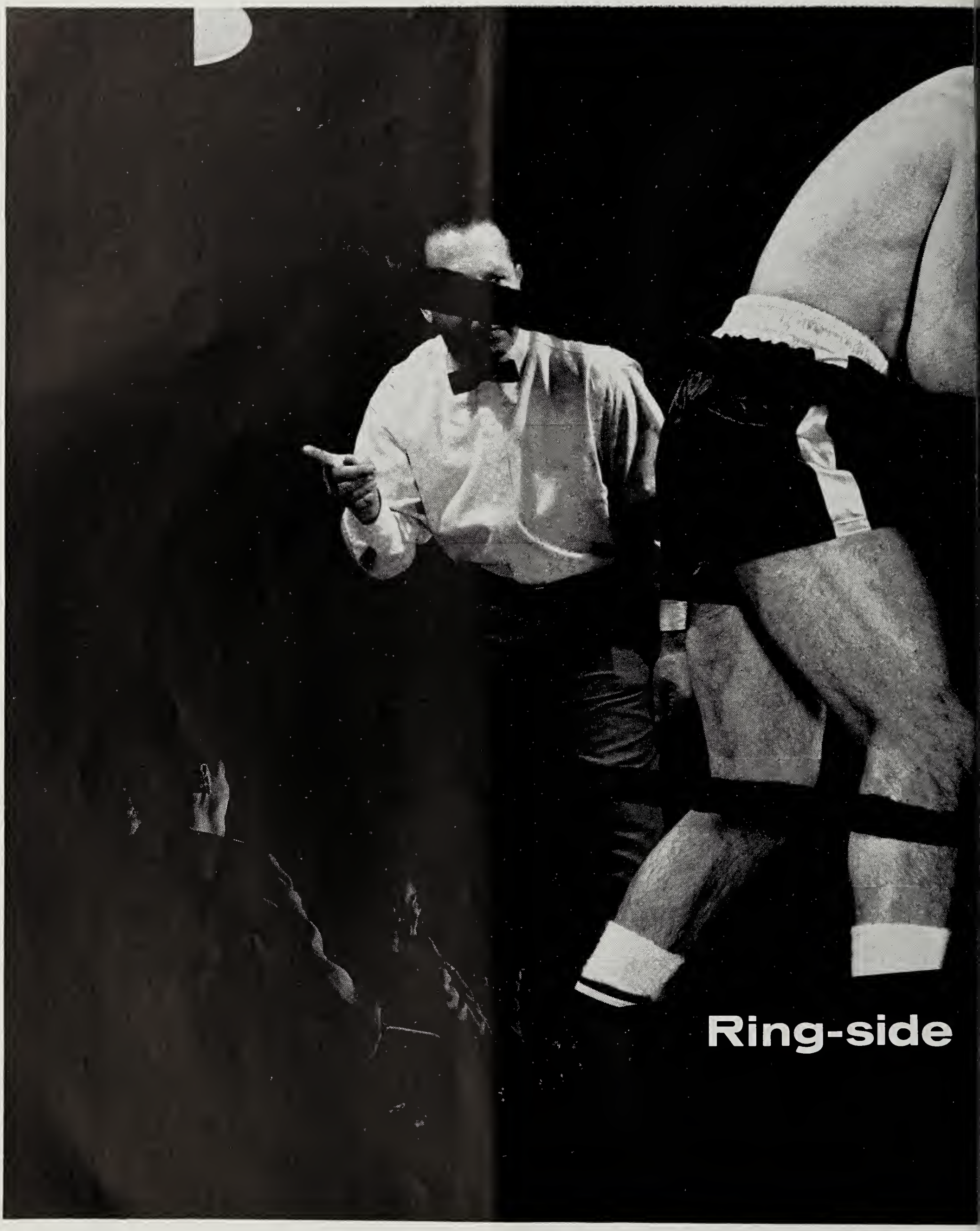
(Continued on Page 755)

FIG. 3—Frame enlargements of a typical TV spot announcement produced with the camera setup described here. As shown in Fig. 1, camera picks up text of card reflected in mirror (2) in Fig. 2; then mirror (1) is moved back to permit lens to pick up announcer, seated in chair. Other manipulations of lens superimposes sponsor's name and later his address.

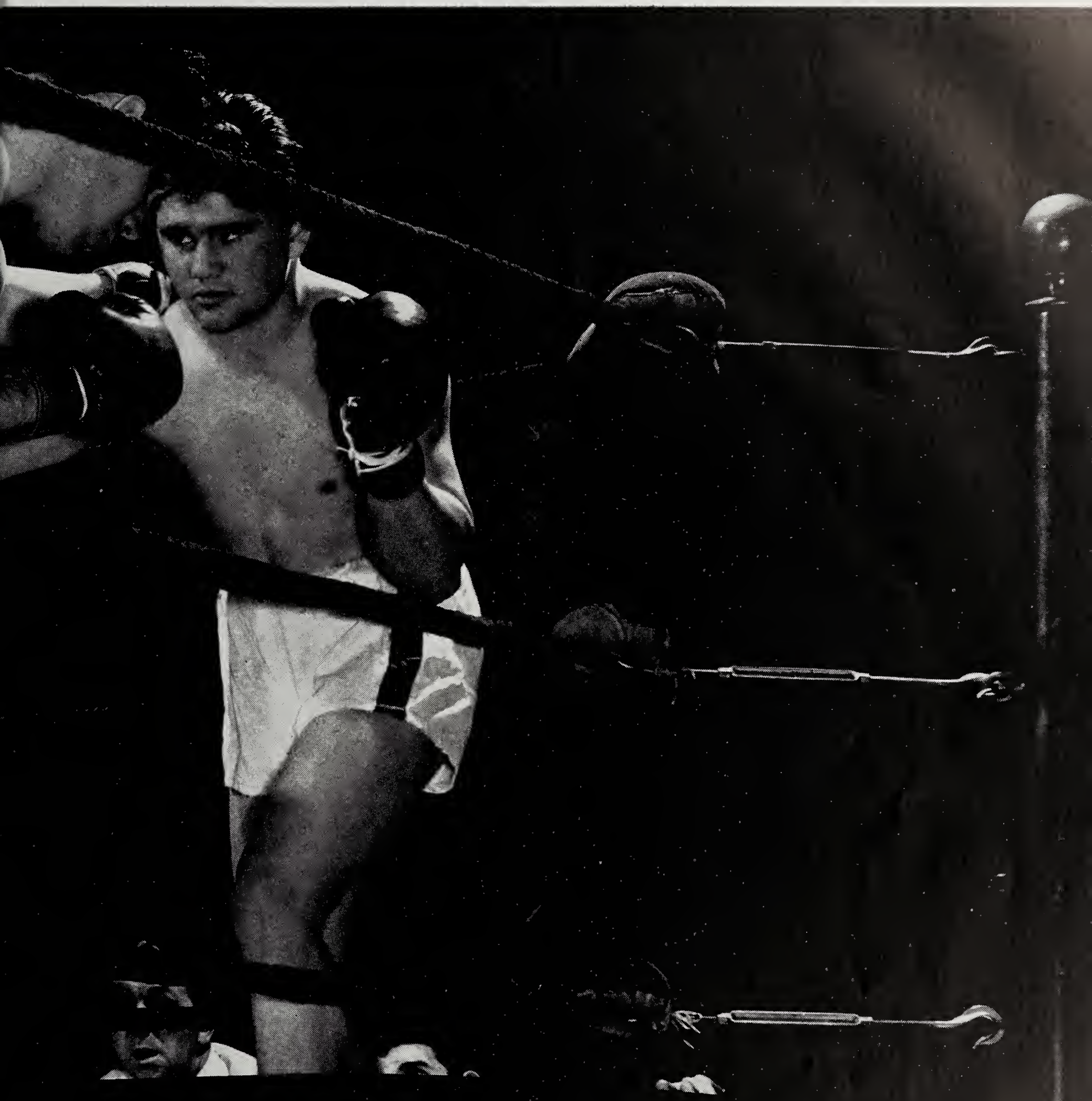


FIG. 4—Top view diagram showing arrangement of camera, mirrors and subjects indicated at "Scene 1" and "Scene 2". Mirrors are in position to photograph the "Money" card, shown in Fig. 1. When mirror in Unit "A" is moved to right, lens picks up announcer in position of "Scene 1' in a wipe-on effect.





Ring-side



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Everybody thrills to a fight! Especially when it's on a wide, wide-screen where every seat is down front! Before this show could go on in this way, time, work, and money went into perfecting new technics in production, processing, and projection. Members of the Eastman Technical Service, working hand-in-hand with the industry, are happy to have helped develop these technics.

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HIGH ON A CAMERA BOOM on location in Italy, cinematographer Jack Cardiff, center, loans his viewing glass to director King Vidor for look at a scene for "War and Peace" before rolling the Vista-Vision camera.

Jack Cardiff's VistaVision Venture

Some highlights on the photographic problems encountered and the techniques employed by Britain's ace cinematographer in filming one of the most talked-about pictures of the year.

By DEREK HILL

BECAUSE TWO CINEMATOGRAPHERS are credited with the photography of "War and Peace," no appraisal of the camera work on this fine production can begin without first defining the individual contributions of each of the artists, both of whom are considered tops in their field.

The credit titles in "W&P" list Jack Cardiff as director of photography with additional photography contributed by Aldo Tonti, a leading Italian cinematographer. Unfortunately I was unable to interview Mr. Tonti, but Mr. Cardiff, having recently returned to London after a four-year stay in Rome, where much of "War and Peace" was filmed, was just starting a new photographic assignment, "The Sleeping Prince," and was accessible for interview. Briefly, according to Cardiff, some of the battle scenes and all of the Napoleon sequences were photographed by Tonti; the rest of the photography of "War and Peace" is his.

Cardiff, whose photography of "Black Narcissus" in 1947 won him an Oscar,

has been named by several reviewers as a certain contender for another Academy Award as a result of his Technicolor and VistaVision photography of "War and Peace."

Before he started filming the Tolstoy epic, Cardiff spent two weeks in Hollywood familiarizing himself with the VistaVision cameras and shooting a number of tests. This was to be his first film in VistaVision, and two brand new VV cameras were flown from Hollywood to Rome for the production. Eventually four VistaVision cameras were made available, and these were used in photographing the three large battle scenes, one of which involved 5,000 extras.

"My experience in shooting 'Scott of the Antarctic' proved highly valuable when it came to shooting many of the scenes staged in snow and snow storms," said Cardiff. "I'd become familiar enough with various snow scenes to be able to recreate the effects I wanted. But sometimes I was just lucky with the location. When we shot on the banks of the Arno river, for instance, there was a slight fog which offered wonderful pictorial possibilities.

"But we also had to create snow and winter aspects for some of the scenes. Actually, a large proportion of the film was shot during the height of the Italian summer, when almost every Roman deserts the capital to escape the relentless heat. To photograph an important winter scene at this time, it became necessary to scatter powdered plaster over a square-mile location site to give it the appearance of frost.

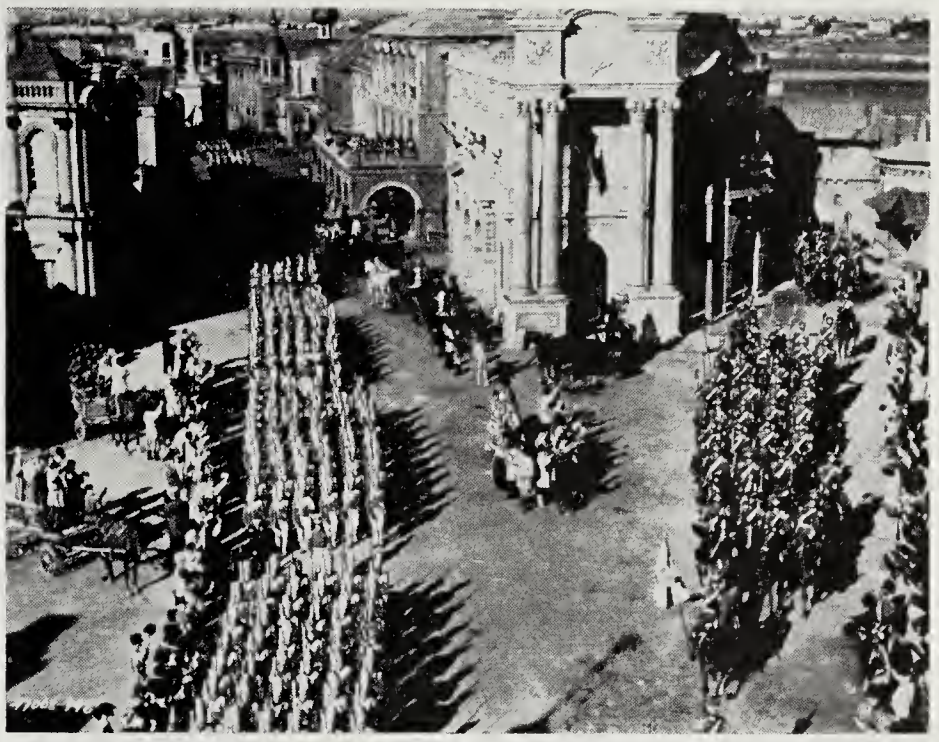
"In August," Cardiff continued, "we couldn't get the Cine Cita stage space we wanted, as Metro-Goldwyn-Mayer had booked it for its production of 'Ben Hur,' which had not yet even been started. So we were obliged to take space in a tiny studio across the road. It was so small that our one set came to within a foot of the walls on every side. Luckily, fire restrictions in Rome are less severe than in Britain.

"By the time we'd lit this set, the temperature was practically bursting the thermometer. And on top of this, the interiors we were shooting were supposed to be mid-winter scenes in which members of the cast had to wear fur coats and appear to shiver in the cold! The floor was literally soaked with perspiration before we began rehearsals."

In all the "exterior" snow scenes which were actually shot in the studio,



TYPICAL of the Cardiff cinematic touch is the inspired lighting given to the many authentic interiors in "War and Peace."



BIG SET for big picture is this city erected near Rome for "War and Peace," locale of many of the picture's great scenes.



MOST IMAGINATIVE photographic treatment is this scene of duel in the snow, staged and shot indoors on sound stage.



ANOTHER realistic "exterior" shot indoors, made all the more real through Cardiff's skillful lighting and camera treatment.



AN INDICATION of the elaborate and detailed planning that went into the filming of "War and Peace," Ponti-de Laurentiis Production for Paramount release, is seen in this photo of Franz Bachelin, American art director and production designer on this epic which King Vidor directed in Europe. All important scenes were first visualized in sketches prepared by Bachelin.



LOOKING DOWN on some of the 8,000 extras used in the battle scenes of "War and Peace," as they struggle into their 1812-type military uniforms for major battle sequences. "Dressing room" is converted sound stage in Italian studio.

Cardiff used a panel of glass, sprayed white, plus a pale green filter before the lens in order to impart a slight mist effect to the scenes. One sequence in the picture, which has attracted much praise for its photographic excellence, is the action of the duel in the snow. Many expert photographers have unqualifiedly declared these scenes actual exteriors. The fact is however that they were shot on Stage 5 at Rome's Cine Citta studio. To achieve the very real effect of dusk on a wintry night, Cardiff used a glass before the camera with sky painted on the upper portion, as the wide-angle lens used in covering the great sweep of the set took in too much vertically.

Though this is a technique which Cardiff has used before, it was new to the Italian technicians, who were rather dubious about the outcome. For a sun effect in the same sequence, Cardiff employed an original trick of directing a lamp onto the sky area of the painted glass mounted before the camera lens. A combination of colored filters plus a fog filter gave Cardiff the effect he sought, and resulted in one of the most talked-about scenes in the film.

All rushes of "War and Peace" had to be sent to London and then returned, which meant it was a week instead of the usual day before the work could be seen. Otherwise Cardiff enjoyed Italian working conditions. He particularly appreciated the freedom from the union restrictions which beset London studios.

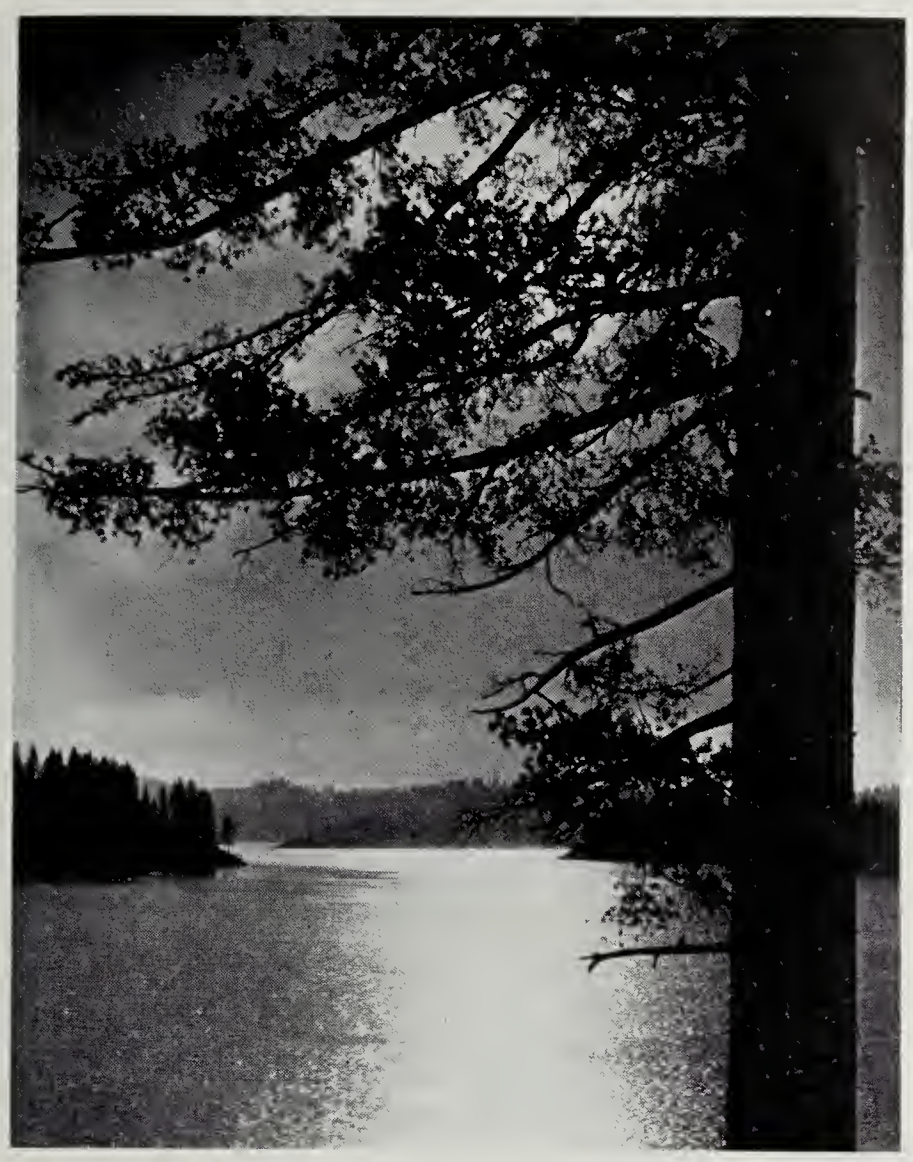
"When I wanted that glass painted with a sky I just picked it up and did it myself," he told me. "In London that would have caused a strike, just because it wasn't strictly my job."

" 'War and Peace' was in many ways a cameraman's holiday," Cardiff assured me. "It was a realistic subject and it demanded a straightforward, raw treatment. I could light faces with flickering firelight; the whole approach was deliberately broad, almost rough."

The contrast between "War and Peace" and Cardiff's current "Sleeping Prince" assignment could hardly be greater. From the camerman's point of view the latter is a typical highlit comedy, with the maximum of lighting and camera control. Closeups, especially of Marilyn Monroe and Sir Lanrence Olivier, are of prime importance.

Cardiff's major problem is caused by the camera dolly he uses. It has a unique wheel system which allows the camera to track sideways at right angles to the normal forwards and backwards movement during the same take. This freedom of movement results in considerable difficulties in placing lights out of camera range, as the field covered during one take can be enormous.

(Continued on Page 746)



CONVINCING "day for night" scenes, whether in black-and-white or color, involve the use of filters and a degree of under-exposure.

SHOOTING NIGHT SCENES IN DAYLIGHT

By CHARLES G. CLARKE, A.S.C.

Director of Photography, 20th Century-Fox.

CINEMATOGRAPHERS in all fields of motion picture production are frequently called upon to shoot night scenes, which for one reason or another must be photographed in daylight. In the major studios this is called shooting "day for night." To obtain a true night effect in daylight often presents problems, whether the production is in black-and-white or color. Over the years, numerous methods have been evolved to aid in the creation of night effects, and not all cameramen follow the same procedure. My approach to the problem is set forth here with the hope it will benefit the many readers who have written to the editor for information on this subject.



Charles G. Clarke, A.S.C.

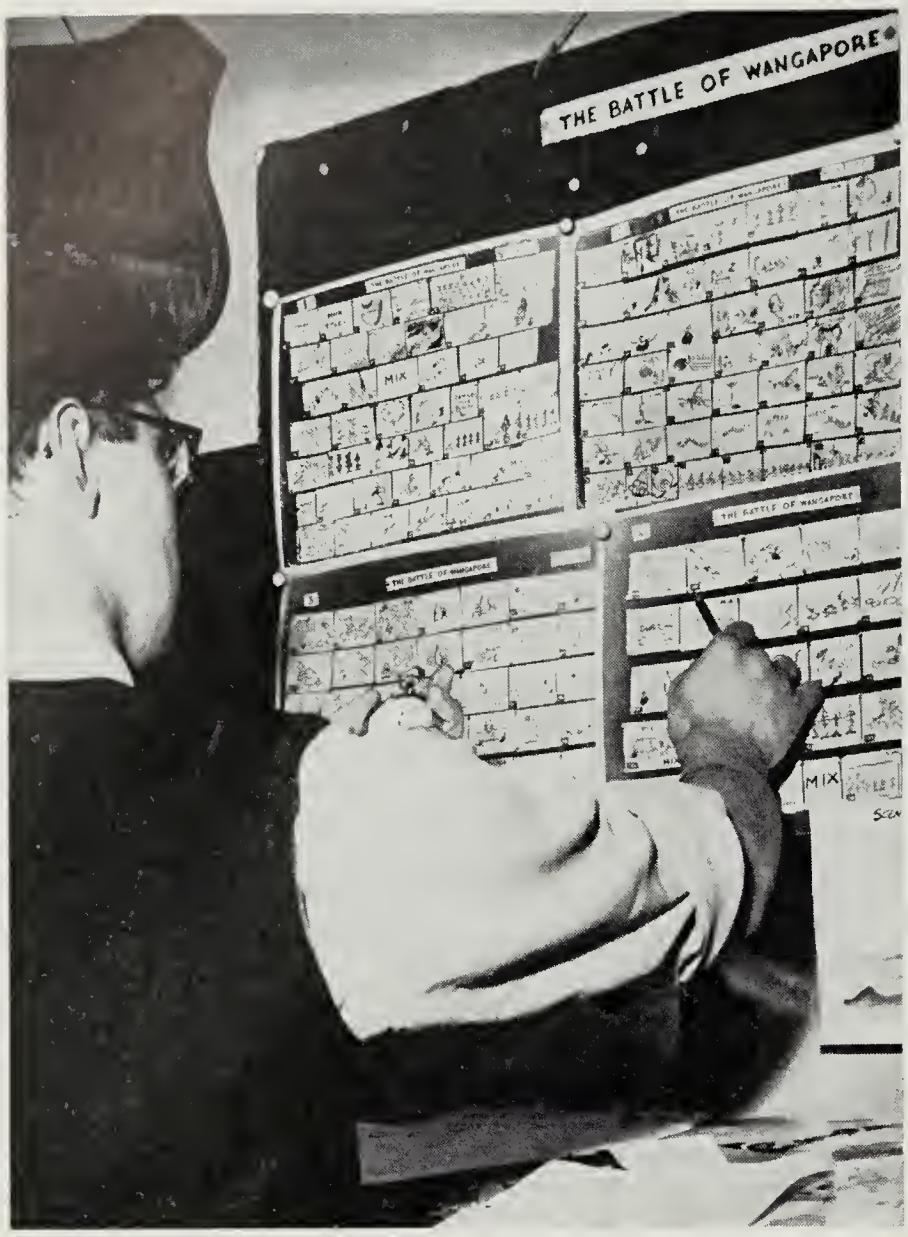
To shoot "day for night," using black-and-white film, the two main requisites are *over-correction* and *under-exposure*. Over-correction is usually provided through use of filters, such as a Wratten 25 (deep red) or Wratten 23A (light red). The Wratten 25 is normally used where ample light prevails; it has a filter factor of 7. The 23A is better suited to semi-shadow areas, as it provides correction with a smaller exposure factor, namely 4. In addition to the filters, exposure should be reduced about two stops. This not only increases the effect of the filter used but also decreases detail in the scene to further enhance the illusion of night.

It has long been the contention that the sky should be rendered as dark as possible in "day for night" shots. Except where a very blue sky prevails, this is not always possible if any detail is to be retained in the foreground areas. Very often a neutral wedge sky filter is employed to hold back the sky in shots of this kind. Use of this filter is particularly advantageous when filming with back-light; and back-light is highly desirable for night effect shots, rendering as it does an outline of objects in the scene in a sort of semi-silhouette, with an absence of detail in the dark areas—which is natural in true night scenes. It should be remembered, however, that the sky is brightest when back-light is employed; there is no blue color to be filtered out, so it must be absorbed by the wedge-type sky filter

(Continued on Page 742)



IN THIS "DAY-FOR-NIGHT" shot, the illusion of nighttime was enhanced by the inclusion in the composition of the two locomotive headlights, the lighted windows of the railway station, and the lamp hanging over the entrance at the rear. Note how the intensified illumination of all three "burn" through the prevailing daylight—necessary to provide the correct intensity in the filtered night shot.



JOHN DABORN, British cine amateur, checks storyboard sketches for his ambitious animated cartoon production, "The Battle of Wangapore." A cooperative amateur venture under direction of Daborn, film won a top award at Cannes Film Festival.



ALL THE PROCEDURES followed by the professional animation studios were employed by Daborn and his Grasshopper Group associates in making "Wangapore." Here he checks a key sketch against his log sheet, determining number of frames for it.

The Grasshopper Group—A Cine Amateur Cooperative

By HAROLD BENSON

BRITAIN'S BEST-KNOWN cine club, the Grasshopper Group, has only been in existence for three years. But already its unique method of working has attracted many of the most celebrated amateurs in Britain to its ranks. For the Grasshopper Group, unlike most local cine organizations, draws its members from all over the country and offers the most far-flung enthusiasts a chance to take part in its productions.

The system employed offers valuable lessons to American amateurs anxious to combine their talents with those of equally keen cine addicts. Among lone workers the expert amateur cameraman is often a hopeless scriptwriter. The would-be director finds himself short of a cast. An outstanding editor may have no idea of the fundamentals of sound recording.

Even in an amateur group specialists in a vital sphere may sometimes be lacking. Or a shortage of equipment may hold up production. But with a nationwide club like the Grasshopper Group, the talents and apparatus are unlimited.

In 1953 John Daborn, a young commercial artist, hit on the idea of a cine group for enthusiasts with particular interests in two fields of film making—cartoons and experimental work. The first may seem an ambitious challenge to amateurs, but Daborn had already become the best known amateur in Britain as the result of two painstaking cartoons he produced whose technical qualities were comparable to those achieved by professionals.

With "The Millstream" and "The History of Walton" he had won almost every trophy available. "The Millstream," which runs for only four minutes, involved fifteen months work, two

thousand paintings, and thousands upon thousands of preliminary drawings and sketches. The animation stand was an upturned kitchen table. Daborn was just 21 at the time.

"The History of Walton," the story of Daborn's home town, was an even more prodigious effort. It was three years in production, and involved exposing 40,000 frames of film, one at a time. Tracks, pans, tilts, wipes, dissolves, double and treble exposures and complicated title effects were needed, and Daborn built his own animation table for the purpose.

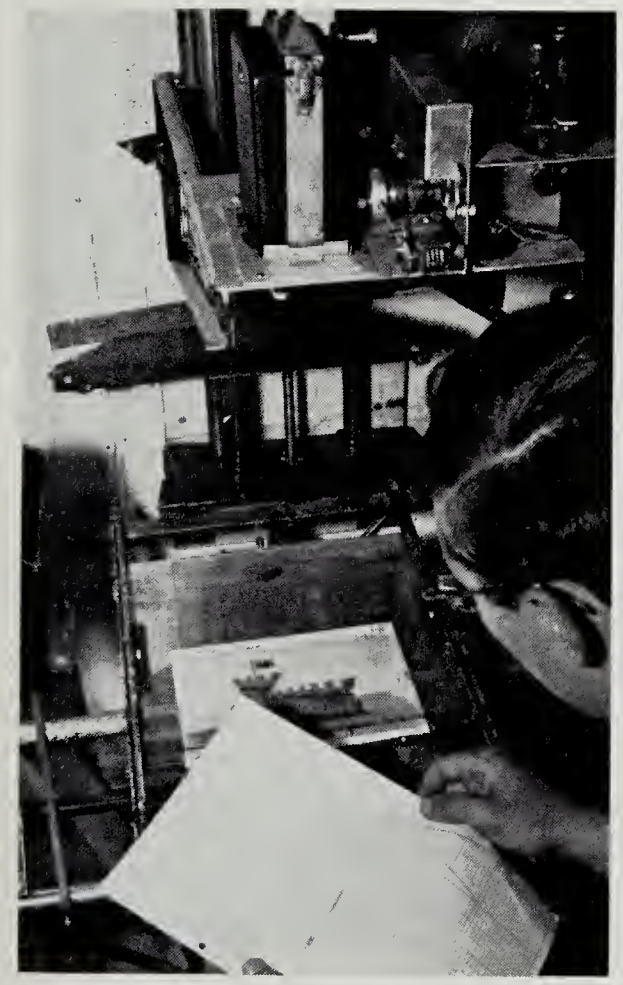
Both cartoons won places in *Amateur Cine World's* "Ten Best Films of the Year" contests, and "Walton" was awarded Film of the Year trophies at both the Cannes Festival and the U.N.I.C.A. contest, where films from sixteen countries were entered. Later "Walton" was screened among the cream of the professional shorts at the Edinburgh Festival.

After the success of these two films and two tentative live-action shorts. Daborn appealed for members to help form a cartoon and experimental organization. With a nucleus of only a dozen or so members he started work on "Two's Company" the first amateur experiment in pixilation—the single frame live-action technique pioneered by Norman McLaren.

The name "Grasshopper" was suggested during the production of this comedy. It had a suggestion of pixilation, with a hint of madness, and the alliteration proved so catchy that the Grasshopper Group was soon a familiar title. Plans for a Group cartoon provided Daborn with his first opportunity of testing the club's unique financial and geographical liaison.



JOHN DABORN, founder and chairman of Britain's Grasshopper Group cine organization, is rated the country's most ambitious amateur, having won numerous awards for his 16mm color films. Group affords cine amateurs opportunity to work cooperatively with other amateurs in making serious films.



DABORN at work at his homemade animation stand, shooting scenes for "The Battle of Wangapore," in 16mm color.

"The Battle of Wangapore" was to be the first amateur sound-on-film color cartoon ever produced. Clearly it was going to be expensive—more expensive than lone workers could afford and even beyond the resources of many cine clubs. Daborn's scheme was based on the possibility of finding a sufficient number of enthusiasts who would be prepared to buy shares in the film at £1 each ($2.80) without promise or even likelihood of getting their money back.

The idea may sound Utopian; but today "The Battle of Wangapore" is a fact. Already it has won an *Amateur Cine World* Ten Best trophy (the "Oscars" of the cine movement) and the Grand Prix at Cannes. It has been screened on television in Britain and may soon be seen on television screens in France, Italy and Switzerland.

Who are the people prepared to finance a film knowing that they cannot make a profit (as any profit automatically goes into Group funds) and may be throwing their money away altogether? They are fellow enthusiasts who appreciate that when they themselves wish to make a film, the people they have supported will be prepared to assist them in turn.

For every member of the Grasshopper Group is entitled to submit ideas, synopses and shooting-scripts to the Grasshopper Committee. If the majority of the committee approves, the film idea is adopted as a Group production. The author, while being responsible for as many roles in the production of the film as he wishes, may call upon other members for any assistance he requires. He may need a lighting technician or the loan of an animated viewer. His requirements are announced in the pages of *Grasshopper News*, the Group's quarterly magazine.

The majority of members live in and around the London area; but active production is often spread throughout the country. Again "The Battle of Wangapore" proved the possibilities of this arrangement. Amateur artists all over Britain sketched and painted scenes for the cartoon at home. Details of the same sequence were prepared several hundred miles apart. Close co-operation was maintained by mail throughout the two and a half years of production. Several of the painters, tracers and animators have never even met.

With live-action productions the limitations on postal co-operation are obviously severe. But even here the development from synopsis to final shooting script, set designing and even editing can be undertaken by members anywhere in the country.

The latest Group production, "Bride and Groom," received its public premiere only a few weeks ago. This is another pixilated comedy, this time in color, with a specially composed optical sound track. It seems to be as likely a contender for an amateur Oscar as "Two's Company" and "The Battle of Wangapore."

Nevertheless, the Group's real value lies not in the number of shields and cups it has won, but in the encourage-

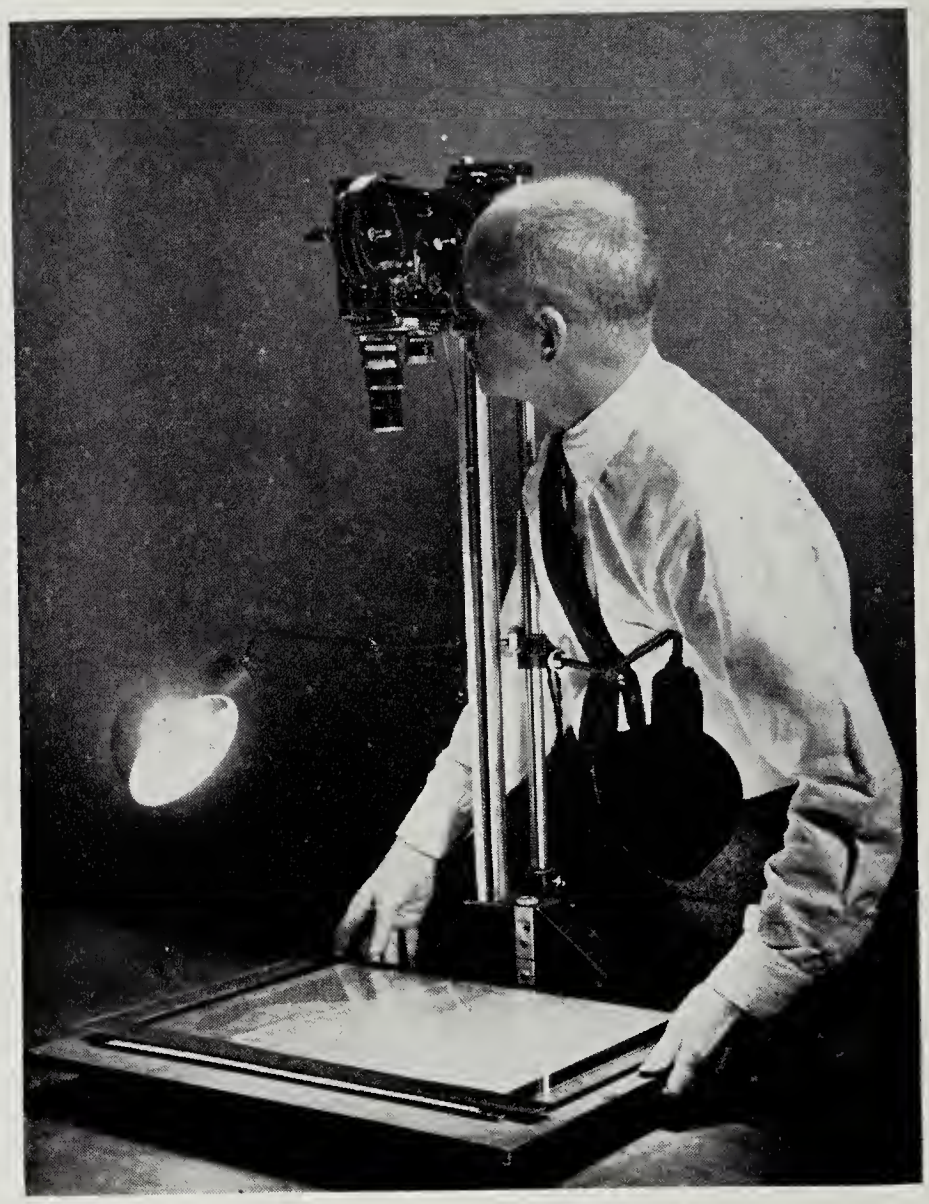
(Continued on Page 750)

Simple Animation Techniques

How to film an animated insert using a Bolex H-16 camera and Bolex Titler . . .

By PETER GIBBONS

(Reprinted by permission from Bolex Reporter)



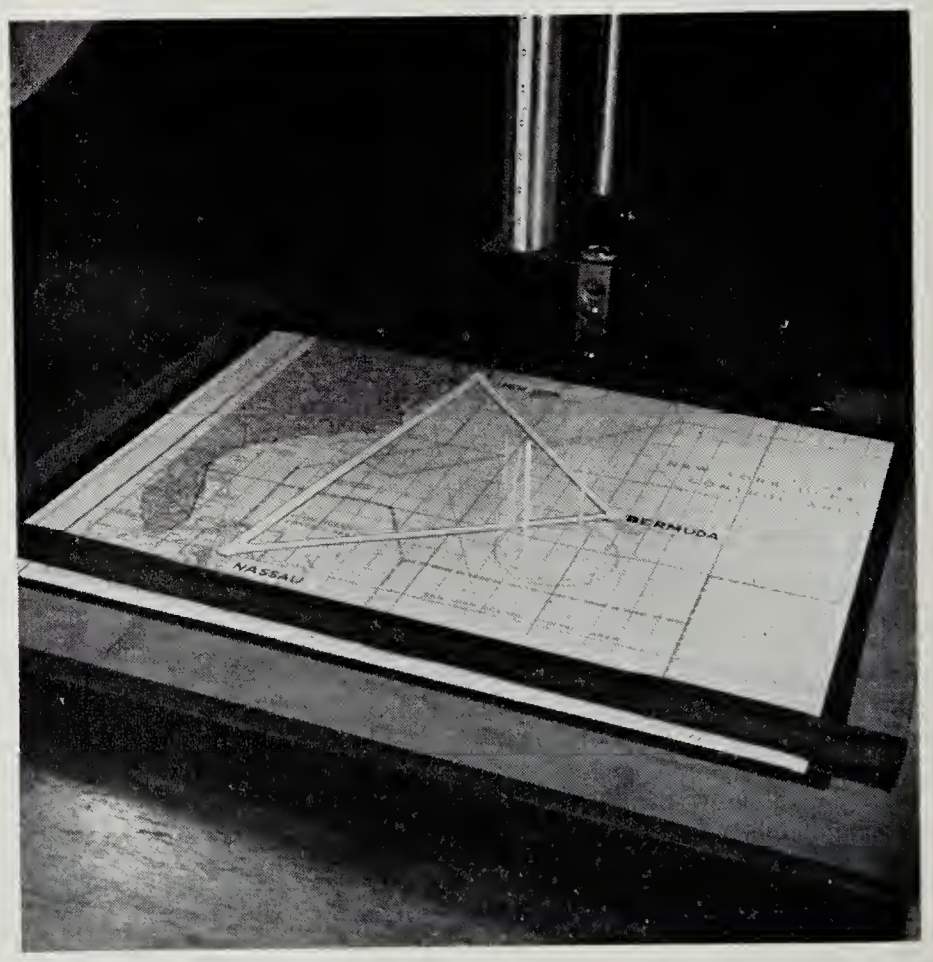
USING THE Bolex prismatic focuser to line up the art work on the animation table. Photofloods in reflectors set at correct angle prevent reflections from slick surface of cells bouncing toward camera lens.

DURING THE ACTUAL shooting of animated sequenees, each scene or part of a scene must be filmed one frame at a time beeause of the exposure problem, as I pointed out last month. It would be impossible to have consistent exposure on the sereen if in some plaees the film was exposed one frame at a time, and in others the eamera had been allowed to run eontinuously, even though it was "hold" footage and no aetion was taking place.

Now that the art work and the exposure sheet are finished, it is time to set up the camera. It must be set up *rigidly* so that it eannot be moved aeeidentally. Remember that the Bolex will have to be wound from time to time and that if it is moved from its original position, all the work that has already been done will be absolutely worthless. An important device for this kind of work is an animation stand, like the Bolex Titler used in a vertieal position, as shown at right. With this versatile pieee of equipment the art work ean be put in plaee and photographed quite easily. Another essential item is a Bolex eable release. Sinee all the work has to be shot one frame at a time, this aeessory euts down not only the labor involved but the possibility of moving the eamera and so spoiling all the previous frames that have been shot.

A great aid in aligning the background and other parts of the pieture is the Bolex Prismatie Foeuser. This little deviee insures perfeet framing and alignment. Nothing is more disappointing than finding, after the work has been done, that the art work was out of line with the frame, or the pieture too far to the top, the side or the bottom of the film frame.

If you do not have the Bolex Titler, the eamera ean be mounted on a wall bracket, an enlarger, or even a tripod, provided the tripod can be tilted so that the eamera ean be pointed straight down. Whatever method is used, rigidity is essential. Animation *can* be shot against a wall, with the art work held vertieally, but it is very awkward; often there are as many as three or four eells on the baekground at the



THE ROUTE LINES to be animated are completely drawn on the top or "overlay" cell, as shown here. The animation is done in reverse, with sections of the lines being "scratched off" or erased between the single-frame exposures.

same time, and for reasons of focus, alignment, lighting, etc., it is necessary to keep them close together. This is most efficiently done when the art work is in the horizontal position, by placing a piece of plate glass over the cells whenever an exposure is made. I use an enlarging easel, which I fasten securely in place by screwing it to the table. A piece of glass, cut to size, is fastened to the cropping device. With this as a platen, it is a simple matter to lift the glass whenever a change has to be made in the art work. If the art work were held vertically, this would be almost impossible.

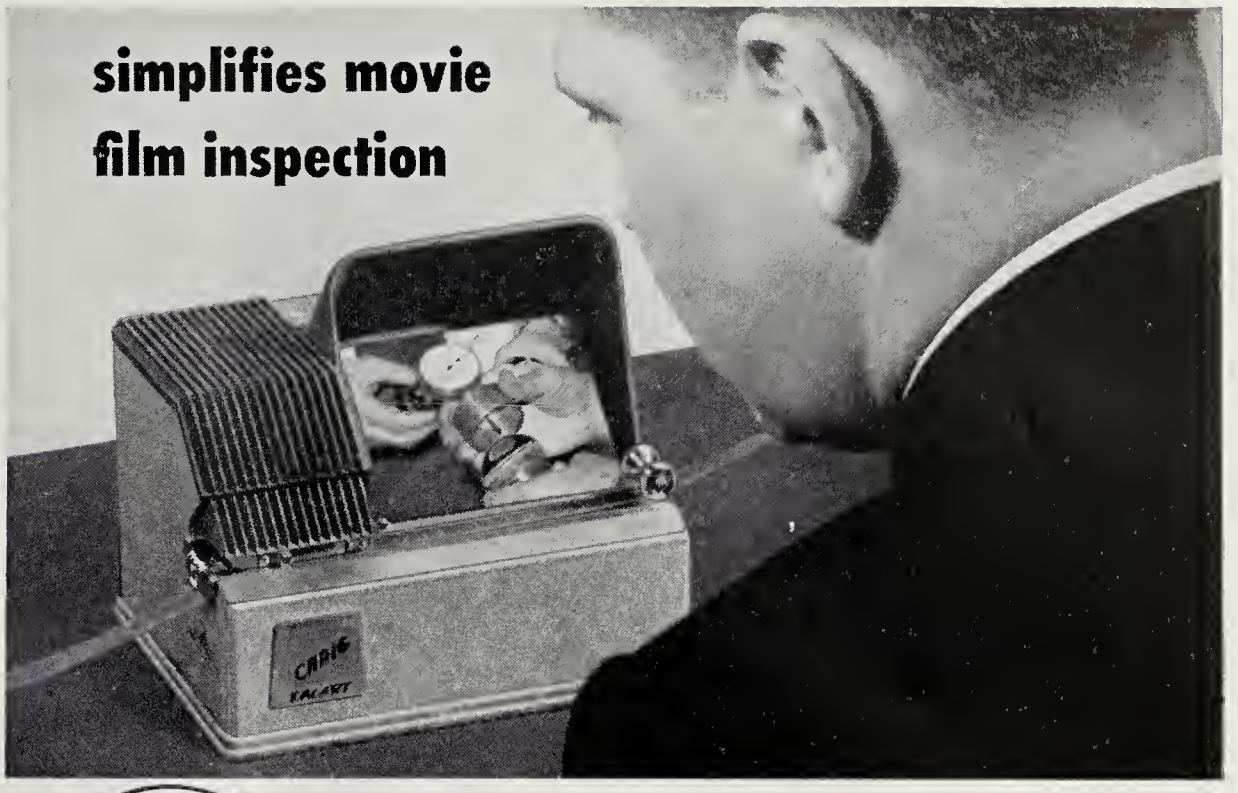
Double 45° angle lighting is used. In this type of lighting two lights are mounted opposite each other and 45° above the horizontal plane in which the art work is held, as illustrated here. This gives equal illumination over the entire area of the field, eliminates any reflections that might be picked up from the shiny cells, and prevents picking up any texture from the background.

Make certain that none of the shiny surfaces of the camera or the stand are reflecting from the cells or the glass platen into the lens. If they are, put black photographic tape on them to eliminate these reflections. These should be observed from the lens position as only those reflections seen from this position will record on the film.

The exposure is determined in the usual way with either an incident light meter or an 18% gray card and a reflected light meter. New photoflood lamps should be used to reduce the possibility of a lamp burning out in the middle of a sequence. If a new lamp burns out after a short time and it is replaced with a new one, there will not be as great a change in color and exposure as if an old one burned out and was replaced with a new one. Photofloods vary considerably in intensity and color if they are burned for any length of time.

With the Bolex set up and the art work in place and illuminated, shooting is ready to begin. The camera is positioned upside down with respect to the art work, because we are going to shoot backwards. With the camera loaded with film, focused, and the lens aperture set to give the right exposure, we are ready to refer to the exposure sheet illustrated and described last month. (See Fig. 3, page 675.) The instantaneous exposure of the Bolex H-16, shooting one frame at a time, is 1/25th of a second. The frame counter should be set at zero. This counter can be used to a very great advantage because a record can be kept as the work goes along.

Let us now look at the exposure sheet. Since we are going to shoot upside down, or backwards, we will have to work from the bottom of the sheet up.



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The footage in frames is counted and accumulated from the top to the bottom, but since we are shooting from the bottom to the top we can (1) use these figures and subtract as we go along, or (2) accumulate the footage from the bottom, and use that. In any case, most of the planning, working, and thinking will have to be done in reverse.

We start with a two-second fade-in of the background over which are the two necessary cells. These consist of one clear cell next to the background, and the route cell with the three legs of the journey painted on it securely fastened in place in perfect register. Remember that the route cell always has to be on top so that the route lines can be scratched off. The "highlight" cells are not in, but are hinged at the side of the background, and can be folded in easily when the time comes. Only one blank cell is in under the route cell since only one "highlight" cell will be in at any one time. This fade-in could be a "cut" instead but I recommend the former here, and it can be done in any one of several ways. It can be done with an Iris Vignetter on the lens, or by starting with the lights completely switched off and fading them in completely onto the subject (using a rheostat control) with a pre-determined exposure.

Next comes the five-second "hold" footage (120 frames) in which no action takes place, but which has to be shot one frame at a time for reasons of exposure. After the last frame has been taken, we start removing the route line from Nassau to New York, starting at New York. On the map the distance is approximately seven inches. The line is to be completely eradicated in 72 frames, which means that on each exposure approximately 1/10th of an inch is to be removed. It is scratched off with a stump, a pencil-like piece of paper or cloth sold in artists supply stores. The stump removes the paint without scratching or marring the cell in any way.

The procedure is as follows: Lift the platen, remove approximately 1/10th of an inch of the line, lower the platen, and make an exposure; lift the platen, remove another 1/10th of an inch of line, lower the platen, and make another exposure—and so on until the entire 72 exposures are made and the entire line is completely removed between New York and Nassau. If the number of exposures does not come out to exactly 72 it does not matter too much since this was computed on a time basis and a few frames one way or the other will not make any difference. However, the exposure sheet should be changed to correspond with the footage counter on the camera so that everything can be kept straight.

Next come three feet of "hold" footage which is shot, as before, one frame

at a time. This continues until the *Nassau* highlight is popped in. At this point the blank cell is removed and the cell with the *Nassau* highlight is folded into place. Checking the exposure sheet, we see that 5 feet of "hold" footage is to be shot (one frame at a time) and then this cell is to be removed. The blank cell is then put back in once more and 24 more frames of "hold" footage are shot, one frame at a time. I keep repeating this over and over because it is a great temptation to run the camera continuously on these runs where no action is taking place. This might seem like a long-drawn-out procedure, but it goes fairly quickly, and if it is done well it will be more than worth the effort.

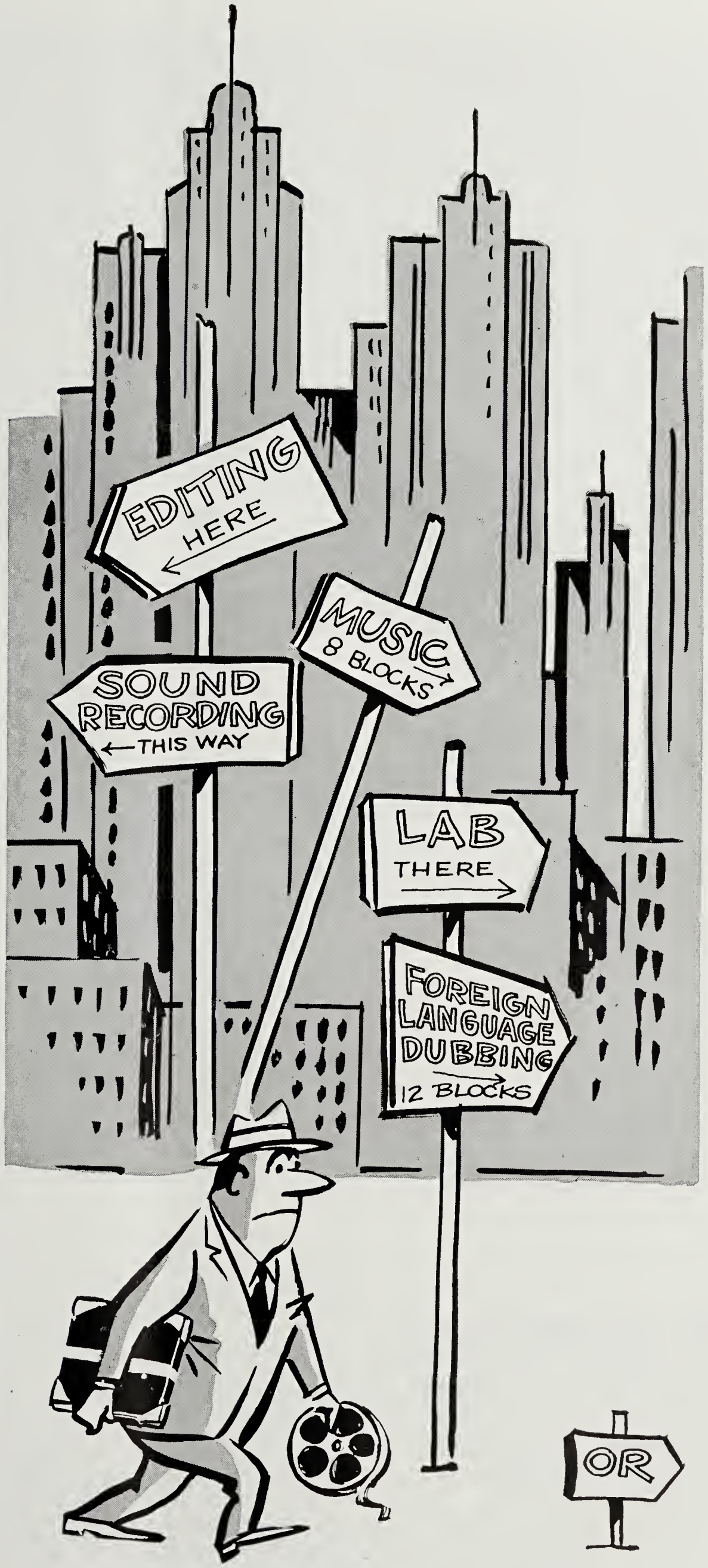
We are now at the point where we have to scratch off the line from *Nassau* to *Bermuda*, starting with *Nassau*. The same thing is done here as was done with the *New York-Nassau* line. Divide the line into parts approximately equal to the number of exposures called for. and scratch off the small division after each exposure. Lift the platen, scratch off a bit, lower the platen, and make an exposure; lift the platen—and so on. The Bermuda highlight is brought in and taken out again exactly the same way the *Nassau* highlight was done, and the line from *Bermuda* to *New York* is scratched off the same way as the other two were.

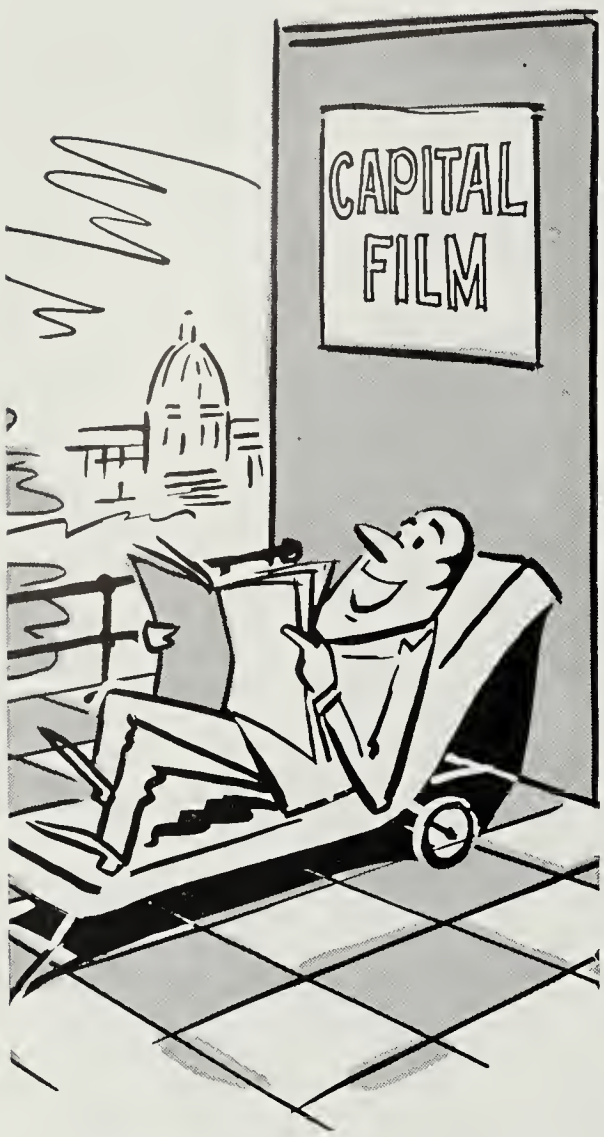
After the entire line is scratched off. 120 frames of the background with two blank cells over it are exposed (there is nothing on the route cell line now). Then comes a two-second *Fade-out* and the job is done.

Supplies needed for simple animation are as follows:

1 map showing proposed route
4 sheets of cellulose acetate
1 jar of Brumbacher's white water-mix paint
1 jar of Brumbacher's colored water-mix paint
1 small brush for paint
1 roll one-inch masking tape
1 stump pencil
1 plate glass platen cut to size

It might seem like quite a task, but the work goes fairly fast once the technique becomes familiar. The important things are patience, precision and persistence. After you have worked at it for a while, you will find that in addition to it being fascinating work it will add a touch of professional excellence to your movies that you will be proud of every time you show them.





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SHOOTING NIGHT SCENES

(Continued From Page 735)

previously mentioned. The scene at top of page—illustrate these conditions.

I always use a neutral density type filter having a transmission factor of about 50%—rather than the tinted filters for night effects, for they retain the same absorption qualities regardless of the saturation of the filter used with the film.

Some photographers use a Pola Screen filter to darken the sky for "day for night" shots, but I have found their use is restricted to certain angles of sunlight—a matter which makes pan shots out of the question.

Up to this point, we have considered shooting "day for night" in open landscapes or in exterior longshots where detail in the actors' faces is not important. But where it is important to show such detail, other factors inject themselves. The red filters, being overcorrective, naturally increase contrast and thus render a face chalky white on the highlight side, and inky black on the shadow side. This harsh result is not at all favorable and can easily be avoided by using a combination of 23A filter with a Wratten 56 (light green) filter. With such a combination, all the good qualities of the 23A red filter are retained and its objectionable features are cancelled out or neutralized by the green filter. The latter prevents the "chalking up" of highlights and allows some of the shadow light to be photographed. The filter factor is six and is computed without any additional cut in exposure.

A trick that makes a "day for night" scene appear more realistic is to introduce some natural light source into the scene, such as a street lamp or a lighted window. The light used should be of high intensity, stronger than the prevailing daylight and of sufficient intensity to pierce through the filters used. This is accomplished by use of high-intensity lamps such as photofloods in street lamps, or a bank of photofloods behind windows that are covered with tracing paper. A typical scene of this sort is illustrated in the lower photo on page 735, which shows bright headlights on the locomotive and the brightly lit windows of the railway station in the background. In the "day for night" photography of this scene, these elements heightened the illusion of night.

In studio practice, regular incandescent lamps are used instead of photofloods, with current supplied by a small generator. Such lamps do not have much effect when used in strong sunlight, so I usually photograph such scenes at dusk. In studio parlance, we call it the "magic hour"—that period when there is enough overall light for

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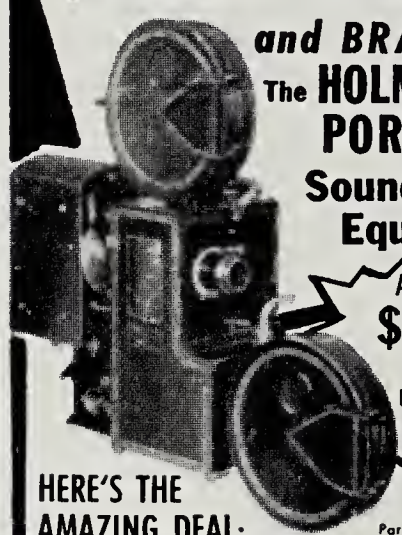
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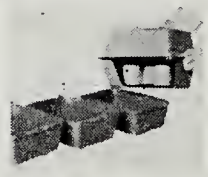
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a basic exposure, yet not enough to minimize the effect of the lights in the windows, street lamps, etc. Because the prevailing light at dusk is so weak, no correction filters are used, though use of a neutral wedge is sometimes necessary where sky is included in the scene. Also, it is sometimes necessary to sidelight the actors in the foreground with light from photo lamps or other light source because of the strictly flat light which prevails at this time of day.

When shooting on location, one can expect to encounter a certain amount of overcast weather to hinder scheduled filming. For this reason I have my building windows prepared with lights and tracing paper so that we can shoot "day for night" scenes if we get socked in. Needless to say, this pleases the production office, for we are not forced to sit around and wait for the weather to clear, and it enables us to get better results in "day for night" shots than when trying to shoot in strong sunlight. This means that booster lights are essential if one is to follow this procedure. This is the system we used when doing a recent series of "horse pictures" at 20th Century-Fox—"Smokey," "Green Grass of Wyoming," "Thunderhead," etc. More recently, when I was shooting scenes for "Love is a Many Splendored Thing" in Hong Kong, I shot "day for night" scenes in twilight augmented by the light from photofloods. Coleman lanterns were also used on the boats.

The procedures discussed thus far apply chiefly to black-and-white photography. However, they differ very little for color photography of "day for night" shots, except that color filters are *never* used. As the impression commonly prevails that night scenes are bluish in tone, shooting in color presents the advantage that "day for night" shots can be made "plus-blue" to help the illusion. The simplest method is to use Type A (interior) color film for shooting the "night" scenes out of doors —without a correction filter. Omitting the filter will produce a pronounced overall blue effect to the scene, and this, plus underexposure, will render a pleasing night effect.

As when shooting with black-and-white film, back-light can often prove advantageous when used with a neutral wedge to control the sky. Of course, when no sky is included in the scene, the wedge is unnecessary. Actually, for any "day for night" shot, it is best to avoid sky in the composition. I prefer to shoot such scenes in color in twilight or where an overcast prevails. I usually start filming as soon as possible after sunset, using an A2 ultra violet filter over the lens. As the prevailing light decreases, the filter is removed so that I end up using straight artificial light with no filter whatever.



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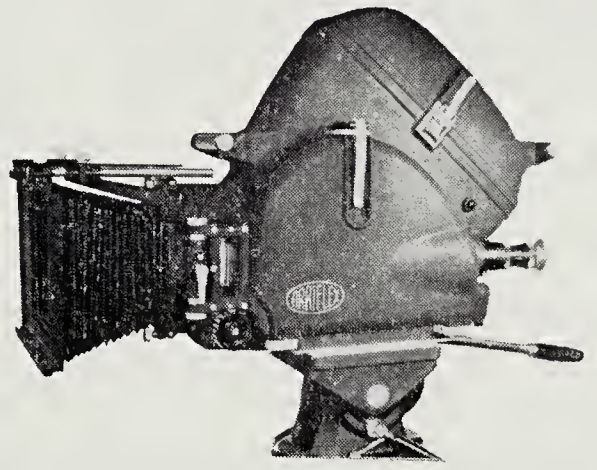


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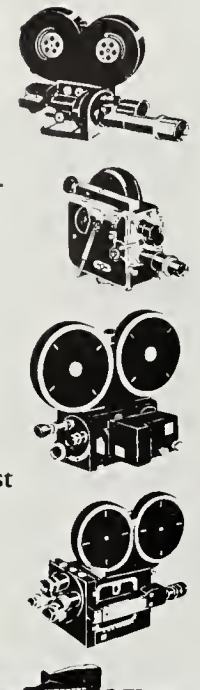
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Were it necessary to use daylight type color film for night effect scenes, then the light blue filter recommended for converting interior color film to daylight use would be employed without making any allowance for filter factor to gain underexposure. As incandescent light photographs white with incandescent type color film, I prefer to use MT2 gelatin filters over the lamps; this renders a soft orange color generally associated with lamp light. This same color gelatin can be used to filter the side lights and any back lights used on the actors. Unfiltered incandescent light is used for fill or key light on actors' faces. This creates a suitable color harmony that further enhances the illusion of night in the scene. The MT2 gelatin filters referred to are obtainable in large sizes from the Mole-Richardson Company, Hollywood.

As may be seen from the foregoing, there is no one set method of photographing "day for night" scenes. The one factor common with any method, however, is that all depend upon underexposure to some degree. Successful photography of "day for night" scenes will result from a combination of the methods suggested above, applying the best method to each individual scene problem. At best such scenes are only illusions, for in actual night, detail is far less discernible than commonly seen in motion pictures, where some detail is necessary in order to maintain continuity of action or theme.

While discussing the photography of night effects with black-and-white film. I did not go into the matter of using infra-red film because its use is restricted to very exceptional long shots where the change in color tone of trees, shrubs and other scene components is unimportant. Use of infra-red film for "day for night" shots, where actors are employed has not proven satisfactory because of its adverse effect on the rendition of makeup, wardrobe, etc.

In my estimation, the revival of blue toning or tinting of the film in black-and-white "day for night" scenes would enhance the effect and prove a novelty to the present generation of theatre-goers.

MULTIPLE CAMERA CONTROL IN TV FILMING

(Continued From Page 723)

knows what a two-shot is as does the grip and the assistant; so I don't have to see what the camera is getting. I rely on the camera crew to accomplish it properly.

When I flash the orange light, this means to do just the opposite from what I require when the green light is flashed, i.e., to pull back for wider coverage as in a three-shot. The operator can dolly back or switch to another lens, according to his best judgment. All lenses on the cameras, incidentally, are set at the same stops and taped to prevent accidental change during filming—the exposure having been determined beforehand through meter readings.

At this point it is readily seen that, except for any oral instructions given the camera crews before the show starts, all instructions issued to them thereafter are silent—by means of the control lights. I maintain a single intercom contact, and that is with my dimmer board operator. In addition there is a PA system, which I use in talking to Art Linkletter or others during the breaks between stunts or during the show in those rare instances when something goes wrong—like a film jam.

There is another important function of the camera sync control panel and that is putting the necessary sync marks on the camera films and the sound track. Sync marks are placed on the camera film by means of a small cue light which is positioned before the lens during the time the camera is inactive, and is flashed by me as the camera starts by means of a switch on the panel. At the same time, a cue mark is recorded on the magnetic sound track on which is recorded all the dialogue of the show.

The small cue light is snapped in place before the camera lens by the assistant as soon as the red light goes off, indicating the camera is stopped; and it remains in place until the camera is re-started and the cue light flashed. Immediately, the cue light is removed from in front of the lens by the assistant.

Purpose of cueing the picture films and the sound film is to give the film cutter positive, visible marks that will enable him to accurately match up the picture with the track. This is the only system I know of that is employed in multiple camera photography where "exact frame" sync is provided; most other systems have a "coast by" of 8 to 10 frames, making it necessary for the editor to search for the exact point where picture matches the sound track.

To further aid the film editor, there is recorded on the sound tape (on a separate track) data which I give orally through a multi-purpose microphone located in my booth. This does not interfere with the show's sound track.

For example, when we start the show —say with cameras 1, 3 and 5 rolling— I call out "Cameras 1, 3, and 5," and this is recorded on the sound track.

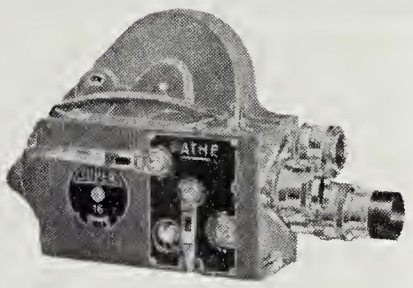
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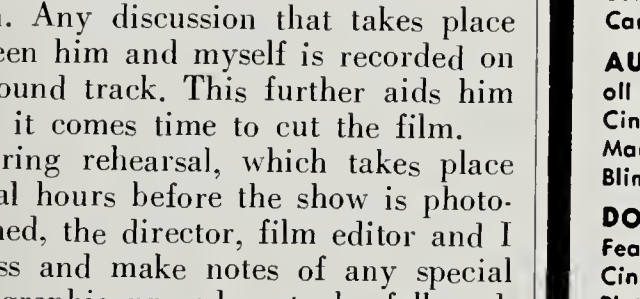
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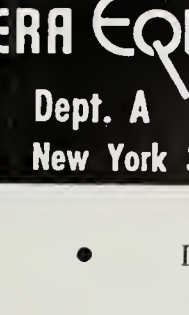
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When it comes time for the editor to cut the picture, he gets the films from these three cameras, looks for the mark made by the cue light and matches them up with his sound track.

Sitting alongside me in the control booth is the script girl who keeps a log on all the cameras. The log shows graphically how long each camera runs on a given take—where it started and where it stopped. She keeps watch on the electronic footage counters above the control panel, checks the footage of each camera. The log goes to the film editor. When he starts to cut the film, it shows him which cameras were "on" at a given point and what lens was being used. This information, plus the information given him on the sound track, enables him to prepare a rough cut of the show in half the time ordinarily required, following other methods.

As the show is being photographed the film editor also sits in the control booth. Any discussion that takes place between him and myself is recorded on the sound track. This further aids him when it comes time to cut the film.

During rehearsal, which takes place several hours before the show is photographed, the director, film editor and I discuss and make notes of any special photographic procedure to be followed. The program is scripted and broken down into sections or "stunts." During

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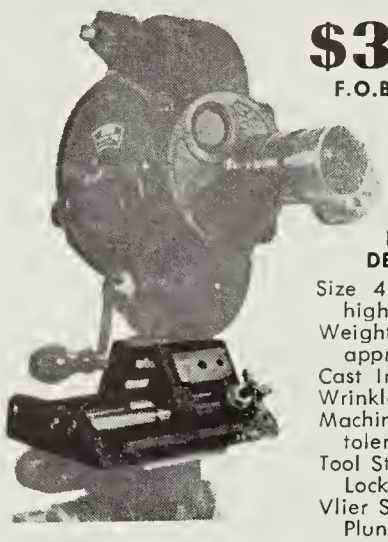
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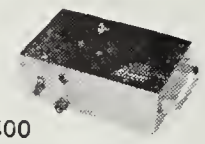
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rehearsal, the cutter makes pencil notes as a further guide to shooting and editing.

One of the advantages of shooting "People Are Funny" with five cameras is that it frees Art Linkletter and others from any limitation of movement. It is unnecessary to put chalk marks or tapes on the floor to restrict their movements, because the five cameras provide a flexibility of coverage to meet any contingency. Linkletter is given greater freedom, too, enabling him to work more naturally with his contestants and show participants.

Furthermore, Art Linkletter is always properly lit, no matter to what part of the stage he moves, because all lighting is from overhead. Flat lighting has been carefully avoided, and we have worked out a pleasing pattern of cross-lighting plus a nice front fill—two 2000-watt lamps with spun-glass diffusers. All lighting units are controlled from a dimmer board, and each one has a number. I have these memorized so that I can order a light change over the intercom phone simply by referring to the lamp by number.

While positions of the lights overhead are more or less fixed, they can be tilted or re-directed with little trouble. During rehearsal, the gaffer and I go over the lighting and make any necessary changes, and determine at what points certain lights are to be raised or lowered in intensity. This information is subsequently passed on to the dimmer board operator. I keep an eye on the lighting as filming proceeds and order certain lights to be raised or lowered whenever the situation requires it.

After the show has been rehearsed and declared ready for filming, the active function of the director and others practically ceases. From there on it is a matter of recording it on film—to illustrate the show photographically to the best advantage. We provide the editor with the pictures necessary to go with his sound track. The "People Are Funny" television program you see each Saturday evening over most of the NBC network stations is the result of this cooperative effort.

UNIV. FILM PRODUCTION

(Continued From Page 726)

ment, mostly Colortran, and can secure additional lights from the television studio when needed.

Students have six editing tables. Each is equipped with splicer, rewinds, viewer, bin, light box, scissors, and film cement.

We have eliminated the need for workprints by using a unique cueing system. Attached to the Auricon sound track exposure lamp is a battery which is controlled by a switch on a line about 15 feet long. The director of the show operates the switch. When he "takes" the Auricon, he closes the switch, and the lamp exposes a stripe down the edge of the film. When the director "takes" the other camera he opens the switch. The processed picture negatives are synchronized, and the editor cuts to the Auricon negative when the stripe appears, and to the other negative when the stripe is not present.

One difficulty is that the director cannot talk to the cameramen, but rehearsal largely takes care of this. We are installing tally lights on each camera. They will be operated by the director's switch also. These lights will enable the cameramen to know when they are not being "taken," and they can change camera position when they are free to break.

We have just completed a film on cosmic rays, about two thirds of which was multicam. This film, incidentally, is the first in a series on those departments in the University which are over 100 years old. Also in production are a series on aerodynamics and one on textile design. We hope eventually to secure two Auricon Supers for this work.

We understand that Precision Film Laboratory is now printing alternate sections from three negative rolls using no spliced-in leader. This will eliminate the need for cutting the multicam negatives.

Funds have been provided for the purchase of a television film and slide projection chain. Since the film projector will be synchronously-driven, we will be able to record film narration with ease. We expect that as more students become interested in film our workshop activities will increase. **END.**

JACK CARDIFF

(Continued From Page 734)

I was lucky enough to be the only journalist allowed onto the closed set at Pinewood. The precautions and restrictions made me feel as if I'd pierced the Iron Curtain.

The lavish ballroom set was one of the most impressive I've seen in a British studio. Cardiff had used yellow filters to give a glow to the rows of glass wall lights, which despite appearances were not switched on. Along with three hundred gowned and coroneted extras, I watched Gardiff shoot a brief duologue between Monroe and young British star Jeremy Spenser. Collaboration between Cardiff and Olivier, the director, seemed very close.

"Yes," Cardiff told me. "Olivier knows exactly what he wants from his cameramen, right down to the finest detail. I've a tremendous admiration for the way in which he manages to cope simultaneously with all the problems of acting without losing his grasp as a director."

Apart from Hitchcock's "Under Capricon," with its involved ten-minute takes, Cardiff considers "The Sleeping Prince" his most challenging film to date — largely because of the lighting problems which the dolly presents. Of his own past work his favorite films are "Black Narcissus" and "The Red Shoes."

His next film, at present untitled, will be with director Henry Hathaway, starring Sophia Loren and John Wayne. Locations will include Libya, Tripoli and Rome. But to Cardiff the most exciting aspect of the film is that it is to be shot in Technirama, the potentialities of which aroused his intense enthusiasm during his last visit to Hollywood.

Early next year Jack Cardiff will turn director. "Death of a Doll" and "Deep Freeze" are already lined up as his first two films. He won't attempt to tackle the photography as well, but he has very definite ideas on the camerman he wants.

END

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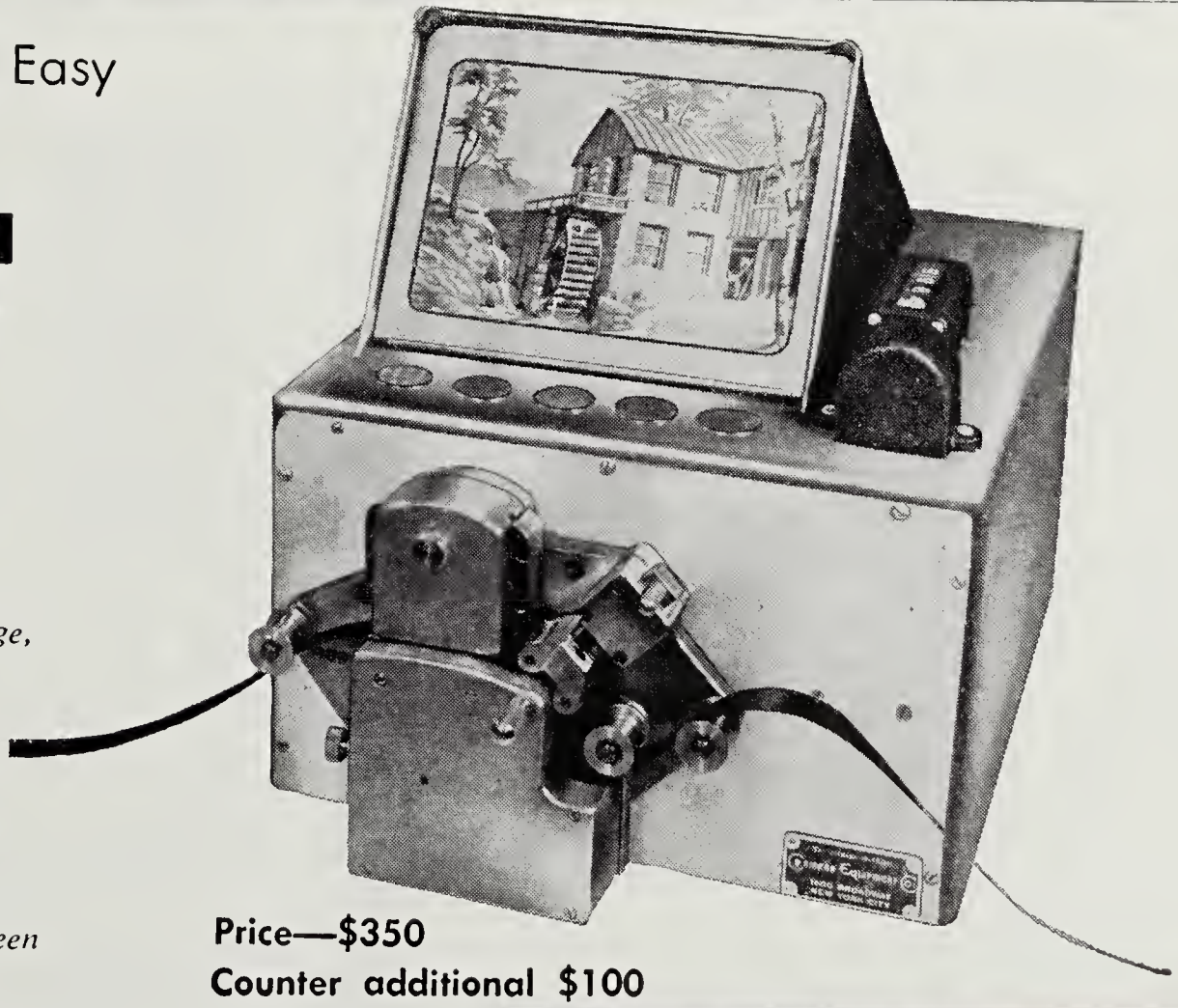
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PHOTOGRAPHIC ASSIGNMENTS

(Continued From Page 720)

INDEPENDENTS

• James Wong Howe, ASC, "The Sweet Smell of Success," (Hecht-Hill-Lancaster Prod. for UA release shooting in New York) with Burt Lancaster, Tony Curtis and Susan Harrison. Alexander MacKendirck, director.

• C. Pennington-Richards, "West of Suez," (Amalgamated Prod., shooting in London) with Keefe Brasselle and Kay Callard. Keefe Brasselle, director.

• William Margulies, "Jungle Heart," (Bel-Air Prods., shooting in Hawaii for UA release) with Lex Barker and Mari Blanchard. Howard W. Koch, director.

• John Warren, ASC, "Daughter of Dr. Jekyll," (Film Venturers Inc. AA release) with John Agar and Gloria Talbott. Edgar Ulmer, director.

• Giovanni Di Venanzo, "Il Grido," (Robt. Alexander Prods., shooting in Rome) with Steven Cochran. Michael Angelo Antoini, director.

• Maury Gertsman, ASC, "Last Gun in Durango," (Peerless Prod.) with George Montgomery. Sidney Salkow, director.

• Howard Deken, "The Call of Duty," (Palmer-Dekan Prods., shooting in Baltimore, Md.) with Mark Kosleck and Dick Van Patten. Bob Murphy, director.

KEYWEST STUDIOS

• Walter Strenge, ASC, Series of religious pictures. William Claxton, director.

KLING STUDIOS

• Brydon Baker, "Death Valley Days,"* (McGowan Prods.). Stuart McGowan, director.

KTTV

• Stuart Thompson, ASC, "Lassie,"* (Robert Maxwell Prods.) with Jan Clayton and George Cleveland. Les Selander, director.

• Kenneth Peach, ASC, "The Trial of Benjie Galt," (Grand Prod. for UA release; widescreen) with Sterling Hayden and Darryl Hickman. Sidney Salkow, director.

LINKLETTER PLAYHOUSE

• Alan Stensvold, ASC, "People Are Funny,"* (Art Linkletter Prods.) with Art Linkletter. Irv Atkins, director.

METRO-GOLDWYN-MAYER

• John Alton, "Designing Woman," (CinemaScope and Color) with Gregory Peck and Lauren Bacall. Vincente Minnelli, director.

• Harold Marzorati, ASC, "Gun Glory," (CinemaScope and Metrocolor) with Stewart Grainger and Rhonda Fleming. Roy Rowland, director.

• George Folsey, ASC, "The Seventh Vow," (CinemaScope; shooting in Hong Kong) with Eleanor Parker and Bill Travers. Ronald Neame, director.

• Robert Bronner, "Silk Stockings," (Arthur Freed Prods. CinemaScope; Metrocolor) with Cyd Charisse and Peter Lorre. Rouben Mamoulian, director.

• Russell Harlan, ASC, "This Could be the Night," (Widescope) with Jean Simmons and Paul Douglas. Robert Wise, director.

• Desmond Dickenson, "Action of the Tiger," (Blau-Meyer Prods., shooting in Spain) with Van Johnson and Martine Carole. Terrence Young, director.

MGM BRITISH STUDIOS

• Paul Beeson, ASC, "The Shiralee," (Ealing Films) with Peter Finch and Rosemary Harris. Leslie Norman, director.

MOTION PICTURE CENTER

• Sid Hickox, ASC, "I Love Lucy,"* (Desilu Prods.) with Lucille Ball and Desi Arnaz. James Kern, director; "December Bride,"* (Desilu Prods.) with Spring Byington, Dean Miller, Frances Rafferty, Jerry Thorpe, director.

• Robert deGrasse, ASC, "The Danny Thomas Show,"* (Desilu Prods.) with Danny Thomas, Sherry Jackson. Sheldon Leonard, director; "The Brothers,"* (Desilu Prods.) with Gale Gordon. Hy Averback, director.

• Henry Cronjager, "Sheriff of Cochise,"* (Desilu Prods.) with John Bromfield. Lee Sholem, director.

• Joe Novak, ASC, "Wire Service,"* (Desilu Prods. Shooting in Mexico & England), with Dane Clark. Various directors.

• Charles Straumer, "Adventures of Jim Bowie,"* (Desilu Prods.) with Scott Forbes. Lewis Foster, director.

PARAMOUNT

• Daniel L. Fapp, ASC, "The Joker" (VistaVision) with Frank Sinatra and Jeanne Crain. Charles Vidor, director.

• Loyal Griggs, ASC, "The Tin Star," (VistaVision) with Henry Fonda and Betsy Palmer. Anthony Mann, director.

RAMPART STUDIOS

• Ralph Woolsey, ASC, Connecticut General Life Insurance commercial* (Parthenon Prods.) Jack McDougall, director.

REPUBLIC STUDIOS

• Ed Colman, ASC, "Noah's Ark,"* (Mark VII Prods.) with Paul Burke. Jack Webb, director.

• Reggie Lanning, "Alfred Hitchcock Presents,"* H. Dougherty, director.

• Virgil Miller, ASC, "Do You Trust Your Wife,"* (Don Fedderson Prods.) with Edgar Bergen. Jim Morgan, director.

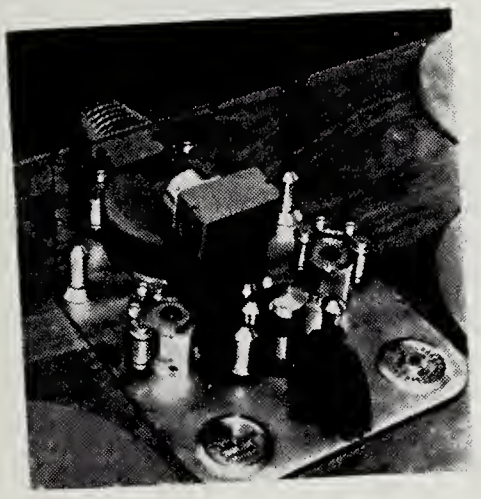
• Jack Marta, "Spoilers of the Forest," (Naturama; Trucolor) with Rod Cameron and Vera Ralston. Joe Kane, producer-director.

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- HERB KIRKPATRICK, "Soldiers of Fortune,"* (Revue Prods.) with John Russell. Paul Landers, director: "The Millionaire,"* (Don Fedderson Prods.) Al Green, director; "Heinz Studio 57,"* (Revue Prods.) with Ralph Bellamy. H. Doughtery, director.

- WILLIAM SICKNER, ASC, "The Millionaire,"* (Don Fedderson Prods.) Al Green, director; "On Trial,"* (Fordyce Inc.) with Joseph Cotton. H. Dougherty, director; Schlitz Playhouse of Stars,"* (Meridan Prods.) with Edmund O'Brien. Don Heis, director.

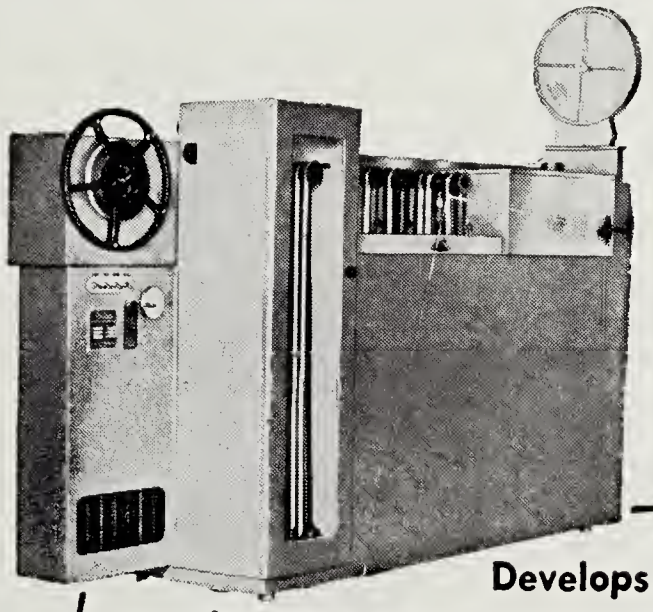
- CLARK RAMSEY, ASC, "Soldiers of Fortune,"* (Revue Prods.) with John Russell. Paul Landers, director; "Crusader,"* (Revue Prods.) Brian Keith, director; "Nevada State Troopers,"* with Rod Cameran. Richard Irving, director.

- ELLIS THACKERY, ASC, "Frontier Doctor,"* (Studio City TV) with Rex Allen. William Whitney, director.

- ROBERT PITTACK, ASC, "General Electric Theatre,"* (Revue Prods.) with Greer Garson. Jules Bricken, director.

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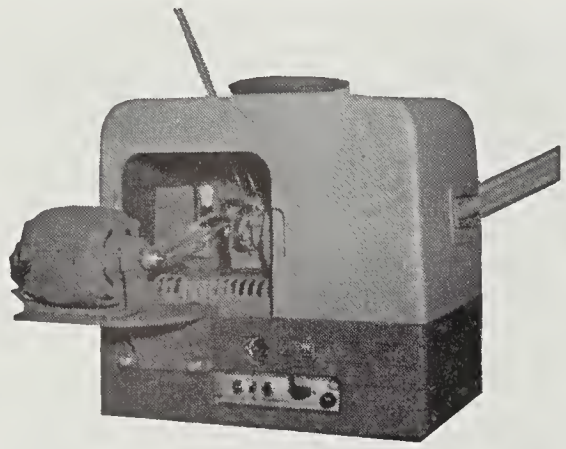
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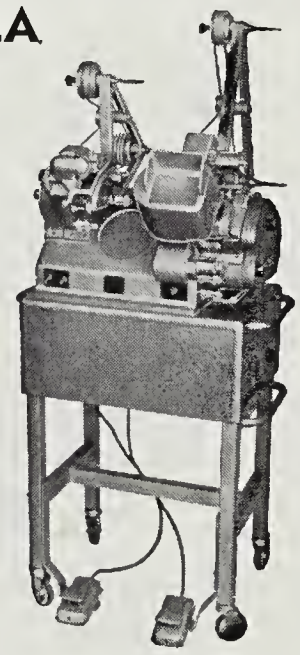
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• JACK MACKENZIE, ASC, "Code 3,"* Various directors.

• PAUL IVANO, "Stories of John Nesbitt,"* with John Nesbitt. Various directors.

• LOTHROP WORTH, ASC, "The Gale Storm Show,"* with Gale Storm and ZaSu Pitts. Various directors.

RKO

• ROBERT PLANCK, ASC, "The Girl Most Likely," (Eastman color) with Jane Powell and Cliff Robertson. Mitchell Leisen, director.

• WILLIAM SNYDER, ASC, "Escapade in Japan," (wide-screen; color; shooting in Japan) with Teresa Wright and Cameron Mitchell. Arthur Lubin, producer-director.

• MAURICE HARTZBAND, "The Violators," (Galahad Prods. shooting in N. Y.) with Arthur O'Connell. John Newland, director.

RKO-PATHE

• FRANK REDMAN, ASC, "Hey Jeannie,"* (Four Star Prods.) with Jeannie Carson, Allen Jenkins. Les Goodwin, director.

• GEORGE DISKANT, ASC, "Dick Powell's Zane Grey Theatre,"* (Four Star Prods.) with Dick Powell. Various directors; "Mr. Adam and Eve,"* (Bridge Prods., Inc.) with Ida Lupino, Howard Duff. Frederick de Cordova and Richard Kinon, directors.

20TH CENTURY FOX

• OSSIE MORRIS, "Heaven Knows, Mr. Allison," with Deborah Kerr and Robert Mitchum. John Huston, director.

• CHARLES CLARKE, ASC, "Oh, Men! Oh, Women!" (CinemaScope & Metro color) with Dan Dailey and Ginger Rogers. Nunnally Johnson, producer-director.

• LEON SHAMROY, ASC, "The Girl Can't Help It," (CinemaScope) with Tom Ewell and Jayne Mansfield. Frank Tashlin, director.

• MILTON KRASNER, ASC (shooting in Greece; CinemaScope; DeLuxe color), "Boy On a Dolphin," with Alan Ladd, Clifton Webb and Sophia Loren. Jean Negulesco, director.

• FREDERICK YOUNG, ASC, "Island in the Sun" (CinemaScope & color; shooting in B.W.I.) with James Mason and Joan Fontaine. Robert Rossen, director.

• HAROLD LIPSTEIN, ASC, "Conquest," (CinemaScope; DeLuxe color; shooting in Mexico) with Ray Milland and Debra Paget. Allan Dwan, director.

UNIVERSAL - INTERNATIONAL

• WILLIAM DANIELS, ASC, "Night Passage," (Technirama) with James Stewart and Dianne Foster. James Neilson, director.

• ELLIS CARTER, ASC, "The Land Unknown," (CinemaScope) with Jock Mahoney and Shawn Smith. Virgil Vogel, director.

• ARTHUR ARLING, ASC, "The Man of a Thousand Faces," (CinemaScope) with Jeff Chandler, Orson Wells and Colleen Miller. Jack Arnold, director.

• IRVING GLASSBERG, ASC, "Joe Dakota," (color) with Jock Mahoney and Luana Patten. Richard Bartlett, director; Reny Delco commercial.* Wil Cowan, director; Ford commercial.* John Sherwood, director; United States Steel commercial.* Wil Cowan, director.

• GEORGE ROBINSON, ASC, Ford commercial.* John Sherwood, director.

• CLARK RAMSEY, ASC, Old Gold commercial.* Jack Daniels, director.

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• STANLEY CORTEZ, ASC, "Top Secret Affair" with Susan Hayward and Kirk Douglas. H. C. Potter, director.

• JACK CARDIFF, "The Sleeping Prince," (LOP Production shooting in London) with Marilyn Monroe and Laurence Olivier. Laurence Olivier, producer-director.

• HARRY STRADLING, ASC, & GAYNE RESCHER, ASC, "A Face In The Crowd," (Newton Prod. shooting in Arkansas) with Andy Griffith and Patricia Neal. Elia Kazan, producer-director.

• WILLIAM CLOTHIER, "Lafayette Escadrille," with Tab Hunter and Etchika Choureau. Wm. Wellman, producer-director.

• RAY FERNSTROM, ASC, "Lafayette Escadrille," (Aerial photography).

• HAROLD STINE, ASC, "Conflict,"* with Keith Andes. John Rich, director.

• TED MCCORD, ASC, "Shoot Out at Medicine Bend," with Randolph Scott and Dani Crayne. Richard L. Bare, director.

• NICK MUSURACA, ASC, "The Story of Mankind," with Ronald Colman and Charles Coburn. Irwin Allen, producer-director.

• LIONEL LINDEN, ASC, "The Black Scorpion," (shooting in Mexico City) with Richard Denning and Mara Corday. Edward Ludwig, director.

• EDWIN DUPAR, ASC, "Cheyenne," with Clint Walker. Lester Martinson, director.

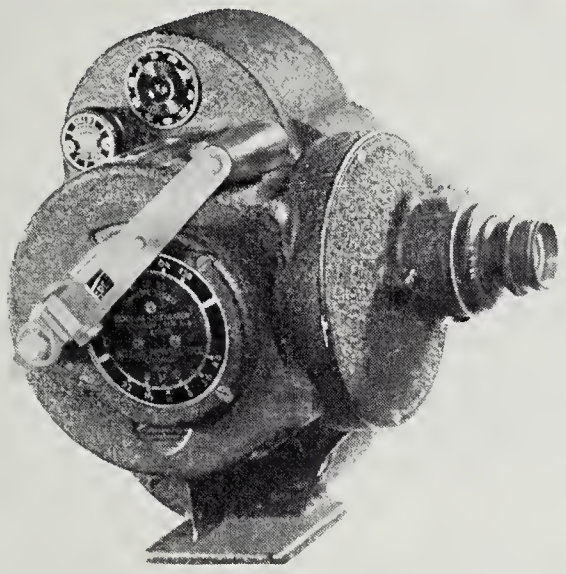
GRASSHOPPER GROUP

(Continued From Page 737)

ment and assistance it offers to some of Britain's less widely publicized amateurs. Thanks to the Group's annual season of screenings of out-of-the-rut shorts, several outstanding talents have been discovered among its members.

Stuart Wynn Jones, who has been quietly working at animated experiments and employing discs and synthetic music, was an unknown name until his charming interpretation of "Linden Lea" and his abstract "Oodles of Doodles" were enthusiastically received at a Grasshopper show. As a result he has been encouraged to make "A Short Spell," a delightful two-minute trifle drawn direct onto film with a hand-painted sound track; and he is currently working on "Pythagoras," an instructional-with-a-difference.

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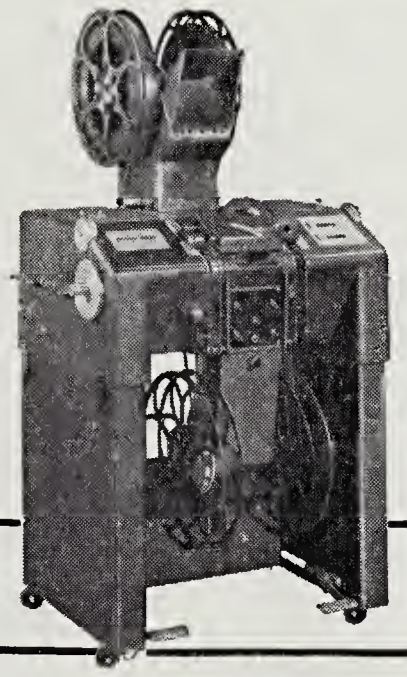
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Similarly Grasshoppers have rescued films passed over by judges. "Watch the Birdie," the most popular film shown during their first season, had been practically ignored by adjudicators; yet this brilliantly inventive amateur cartoon is far superior to anything Daborn or the Group have yet produced. Bob Godfrey and Keith Learner. the team behind "Birdie," have since had their work compared to the best of U.P.A. cartoons, and are now producing Biographic Cartoon Films in their own professional studio.

Kevin Brownlow, at eighteen the youngest member of the Grasshoppers, narrowly missed a Ten Best award with "The Capture." But for the Group, the film would have been forgotten. As it is its reception at Group screenings has given Brownlow the encouragement to embark on "It Happened Here," which, against the background of an England occupied by Nazis, explores the psychology of a defeated people. With large-scale crowd scenes in central London locations, it is the most ambitious amateur film ever attempted in Britain.

The three films so far produced by the Group as a group have attempted little that is really new, despite the pots and applause. "Two's Company" and "Bride and Groom" are mere imitations of McLaren's pixilation technique with-



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out point or purpose. Neither carries exploration of the style much further. "The Battle of Wangapore" is a staggering achievement for an amateur organization, but for all its visual appeal remains a conventional cartoon which might well have come from any commercial studio. In short, the Grasshopper Group has hardly begun to experiment.

Of the three Grasshopper films currently in production, Wynn Jones's "Pythagoras" and "The Window," a semi-abstract cartoon by Dick Horn, are the most intriguing. "Let Battle Commence," written and directed by Daborn, tells the story of the mammoth effort behind "The Battle of Wangapore."

Already Adventure Films, a new commercial organization, has found ready markets for productions by units and members of the Group all over the world. The opportunities which Grasshoppers thus offer to isolated talents, the chances of financial and technical aid which they afford lone workers, and the stimulus which they provide may yet make this Group the most important development in British amateur movie making.

Tricks Make Titles Interesting

Innovations any cine filmer can employ to add class to his movie titles.

By JOHN FORBES

A GOOD beginning is half the battle in interesting an audience in your picture—and an eye-arresting main title is one of the best ways of getting your picture off to a good start. Here are a few simple camera tricks that will help lift your titles out of the run-of-the-mill class:

In professional movies you've seen titles apparently melt into a formless smear, haven't you? Well, here's an easy way to duplicate the trick for your home movie titles. Begin by making a transparency of your title with a still-camera, using any good, double-coated glass plate (*not* roll or cut film!) like the "Standard Orthonon." For a plain title, simply copy a hand-lettered or typewritten title written in black on a white card; the developed plate, being a negative, will give you white letters on a black field. For an "art" title, you can double-expose your transparency, copying the background from a suitable still *negative*. If your movies are in color, tone your plate with any of the commercially-available toners which will color the emulsion blue, red, green or sepia, and leave the clear letters uncolored.

Now put this into a simple shadow-box attached your titler so that all the illumination on the transparency comes from behind. Line up the title-plate and camera just as you would in shooting any ordinary title.

Now, here's where we come to the trick. In making the transparency, expose and develop the plate as usual, but when you fix it, fix it in plain hypo—that is, with no hardener in the solution. This leaves the emulsion soft. Wash the plate as usual, but only dry it enough to get the surface moisture out.

When you've exposed sufficient footage of your title, heat the plate with an electric heater or blow-torch just outside the camera's field, and as close to the plate as you can get it. The heat will melt the soft emulsion causing it to flow, and the title will disintegrate into a formless blob. Sometimes, depending on the means used for heating the plate, you may find it necessary to have the camera running below normal speed—even to shoot in stop-motion, sometimes—to speed up the "melting" effect.

If you mount the plate upside down while you shoot this trick, you can make the title "melt" in; and by making two identical title-plates, you can make your title melt itself in and out, following the "upside down" procedure.

Another shadow-box trick you can do when shooting titles for color films is to use a black card with letters cut out and illuminated only from behind. You can make the letters any color you want by putting colored cellophane behind them.

For example, put colored cellophane straws behind the letters, arranged in

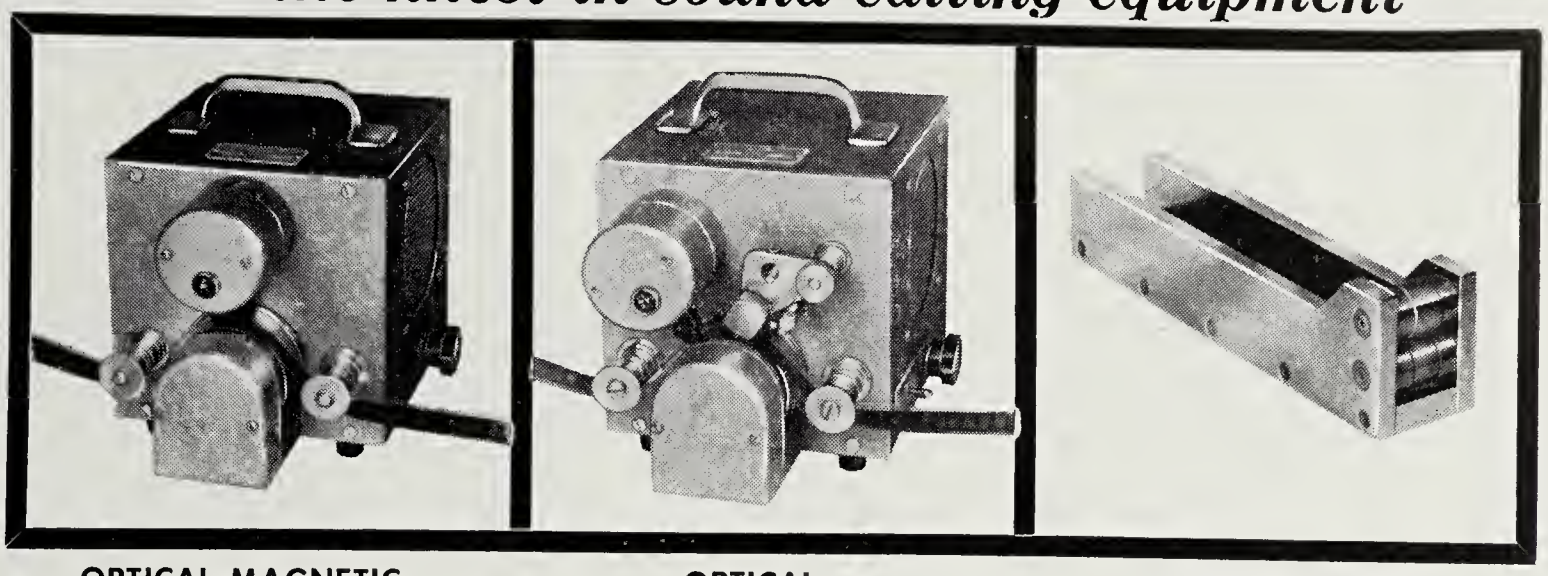
CORRECTION

In the Hollywaod Camera Company advertisement, which appeared an page 684 of our Navember issue, the fallowing statement was inadvertently amitted from the text: "Equipment is Air Force excess stack in used gaad conditian." The advertisement appears alsa in this issue.—ED.

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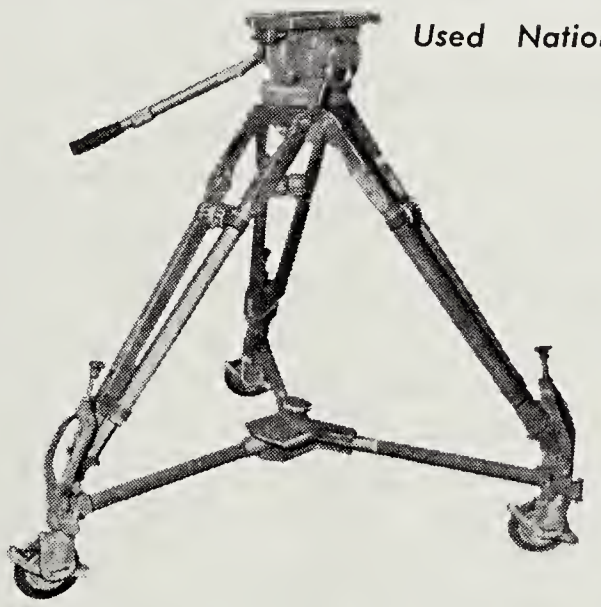
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log-cabin style and in rows of alternate colors. Lit from behind, you'll get a really remarkable effect. And, of course, you can double-expose any picture you want against the black field of this title, and you'll get the effect of multicolored letters superimposed on the picture.

On the other hand, you can eliminate the black field and cut-out letters, and make your whole title of the back-lit cellophane straws, preferably with the straws close together, running horizontally across the frame. Paint your lettering on the straws so that the letters will show up as black silhouettes against the luminous, colored background.

Now, suppose you want these letters to animate in or out. If you want them to animate in, paint the letters, and then as soon as the paint has dried, rotate the straws so that the portion of the letters painted on each straw is on the upper surface of the straw, and thus hidden from the camera. Shoot a few inches of the colored background this way. Then stop the camera and rotate the top row of the straws which have been lettered so that their painted surfaces are toward the camera. Shoot a few frames of this, and then rotate the next lower row, and so on, until all your lettering has been animated in. Then, of course, you can run off the necessary footage of the title, after which you can

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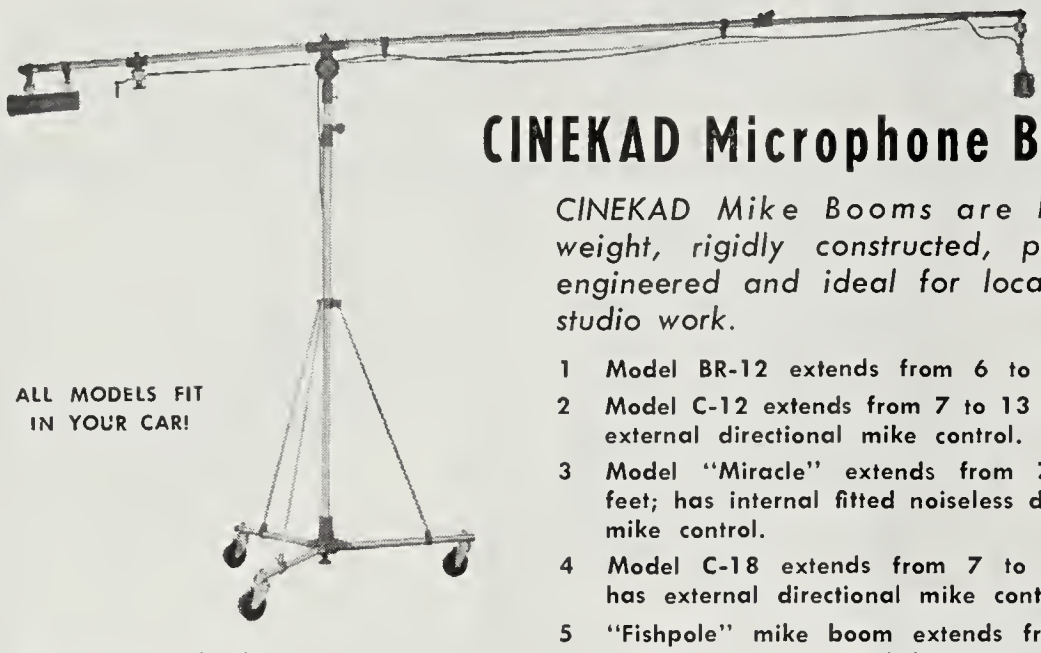
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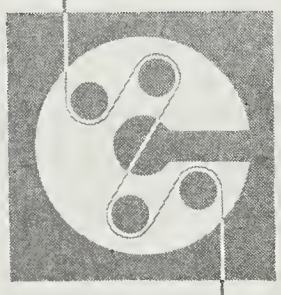
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use the same trick to animate the title-lettering out.

On the screen the effect will be that of the letters "wiping" themselves in and out. Naturally, you can make the wipe move up or down as you wish, and by putting the straws in vertically or at a slanted angle, you can make the wipe move horizontally or diagonally. Another trick you can use is this: take a ball and cover it with a thin coating of either plasticine or shellac. While surface is still tacky, stud it with small fragments of a broken mirror. Then hang this glittery multifaceted ball behind the cellophane-straw curtain. Focus a spotlight on it so that the light reflects from the ball to the cellophane curtain in the titler's shadow-box. If you revolve the ball slowly while you shoot, innumerable little points of light will skitter across the title, changing color as they move from one colored straw to the next.

A variation of this is to reflect the light from a small drum-type box faced with strips of mirror. There are packages of body-powder and bath-salts for sale in drugstores in packages like this. You could give one to your wife—and then beg the box from her for this titling trick!

If you have access to a theatrical-supply store, you can get some of the multi-colored gelatin sheets used for colored-light effects in theatre spotlights. It's known as Brigham's gelatin, and comes in a variety of colors. One type, I believe, has a sort of rainbow-striped effect and is available in several colors. Other types have mottled effects in different color-combinations. The pattern known as No. 80 is a splotchy mixture of green and yellow. No. 85 is a mixture of green, red and clear gelatin. The No. 90, purple, green and clear, and No: 95, red, yellow, green, blue and clear. This material costs only a few cents a sheet, and by using it either directly behind your cut-out title-letters, or in front of a spotlight for front-lighting titles, you can get some very interesting effects. You'll add novelty to them if you keep the gelatin moving so that the color patterns also move.

The possibilities of three-dimensional trick titles are almost endless. These

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really run into what the still-photo enthusiasts call "table-top" photography, for what you do is build a miniature set around the lettering of your title. You can make the set as simple or as elaborate as you want.

One clever one observed in a recent amateur picture devoted to a child's Christmas consisted of a simple, terraced background—probably made of books or something like that—with colored cloth or tissue-paper over them. The letters—the familiar, wooden cut-out block letters—were arranged on the "steps" of this terraced stage. At the sides of the frame were two or three small toys—just enough to give the right atmosphere. The same title-idea was repeated for the end-title. And in this, a small mechanical donkey was wound up and brazenly wagged its tail at the camera, while it shimmied over toward the center of the frame!

"Table-top" titles like this afford lots of opportunities to play around with lighting. You can experiment with back-lighted and cross-lighted effects to your heart's content. Make generous use of spotlights in this, and by using colored gelatins on the spotlights, you can get all sorts of fascinating color combinations

IT'S DONE WITH MIRRORS

(Continued From Page 729)

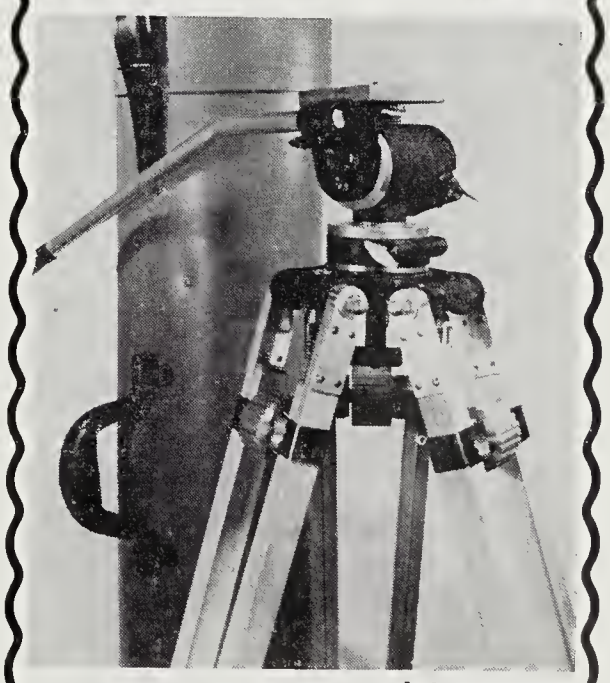
effect superimpositions will require slight increase in exposure due to the inherent light absorbtion of the mirror. How much can be determined by making a short test film.

When the second mirror (which has been cut in size so as to reflect only the bottom half of the image from mirror "B") is moved into position, the effect of splitting the screen horizontally using the upper portion of scene #1 and the lower portion of scene #2 results. This mirror may be either a single-surfaced mirror or a two-way mirror depending upon the effect desired.

With these two mirrors alone it is possible to produce vertical split screen shots in any proportion, horizontal split screen effects, mix live announcers with camera cards or displays or use semi-animated "operating cut-outs," (making the movements from behind the art work during the filming). Changing from one set to the other is done smoothly without stopping the camera.

Other mirrors may be made up to

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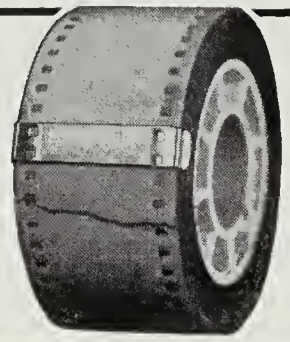
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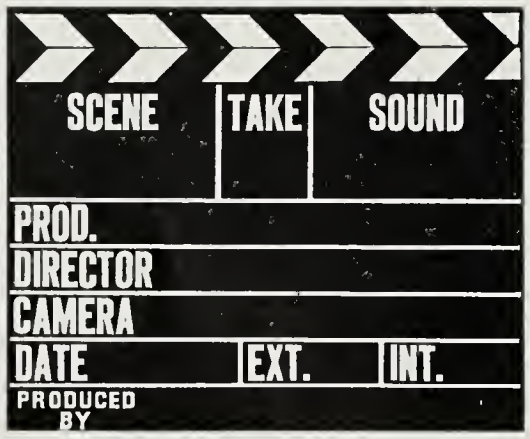
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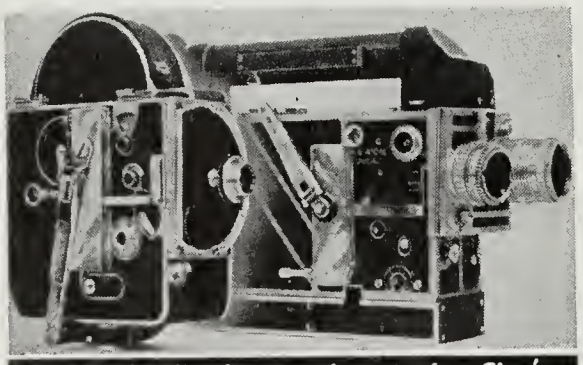
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give numerous varied effects. By having a 1/8″ plate glass, silvered with a circle, diamond or rectangle in the center it is possible to combine the two scenes using only the center of one scene and the surrounding area of the other. This effect is accomplished easily by first moving the full mirror into position in front of the lens, then moving the special effects mirror into position behind it.

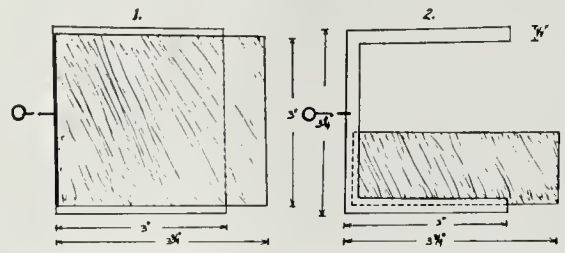


FIG. 5—MOVABLE mirror mounts are made of 1/16″ sheet brass, are 3″x3¾″ in size.

When the first mirror is moved out it will wipe on the surrounding scene directly in view of the lens, leaving the reflected scene only in the center.

In using this mirror unit only a few rehearsals are required for timing and effecting the changes of scenes previous to filming. Where the audio has been pre-recorded on magnetic tape and is being recorded directly onto the film, one can hear the narration and easily time the change to match the story book. This works equally as well with on-the-spot recording.

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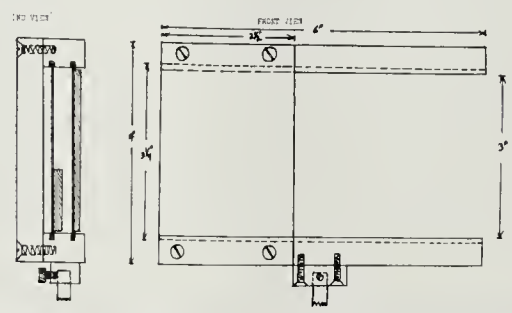


FIG. 6—Mirror unit "A", showing dimensions of unit designed to accept field of Pan Cinor 17mm/70mm zoom lens.

Mirror Unit "A" (1 in Fig. 2; also Figs. 5 and 6, above) is made of quality steel. Bottom and top rails are 1/2″ by 3/4″ steel bars 6″ long. Slots 1/16″ by 1/8″ are machined the full length in order that the brass mirror mounts may be removed. Rails are held securely in alignment by 1/2″ steel plate 2 1/2″ wide drilled and tapped into rails. Block on bottom rail is drilled to accept 3/8″ bolt for mounting to main mounting plate (4), with lock nuts for adjusting height of this unit to lens.

The movable mirror mounts are made of 1/16″ sheet brass 3″ by 3 1/4″ and the mirrors secured in them with glass glue or model cement. For the half-mirror and two-way mirror a three-sided frame is used, leaving the right side free of obstruction to the direct field of the lens.

Mirror unit "B" (2 in Fig. 2; also Fig. 7, below) is made of 1/16″ sheet brass 5″ by 6″ with brass bearings welded top and bottom and 3/8″ shaft, threaded top and bottom. A coil spring on top secured by lock nut permits variable tension to allow easy movement without vibration. This unit, like Unit "A", is mounted on the 1/8″ sheet steel base (4) and the mirror is secured to it by brackets or model glue.

To give the reader an idea what the device can do for him, it is suggested that he make a mock-up of this equip-

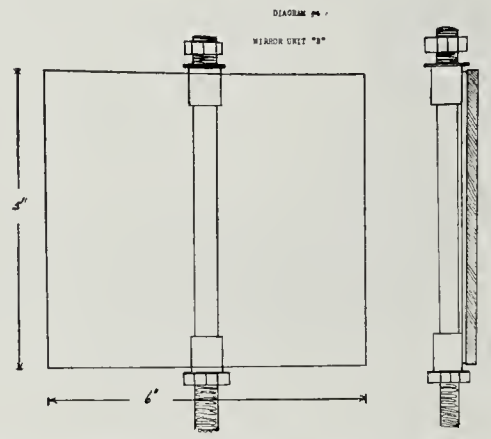


FIG. 7—Mirror unit "B" made of 1/16″ sheet brass, is 5″x6″ in size, pivots on spring-mounted bolt. Mirror is front-surfaced.

ment, using any mirrors that may be handy, to see the effect that can be produced, then proceed with the machining of the unit to fit his particular camera equipment.

Do not attempt to use anything but front-surfaced mirrors of the best quality available. The use of regular plate glass (back surface) mirrors will produce a double image from surface reflections and will cause color saturation that cannot be corrected.

Any glass company equipped to silver mirrors can front-surface 1/8″ plate glass, which will prove quite satisfactory for the most critical cinematography. Two-way mirrors are generally available from the W. P. Fuller Co.

Using this mirror unit it is possible to deliver to clients smart, effective semi-animated spots, or composite sound-on-film commercials in a matter of hours instead of days and weeks. The savings to the producer in time is fantastic, for there is no editing, syncing or printing.

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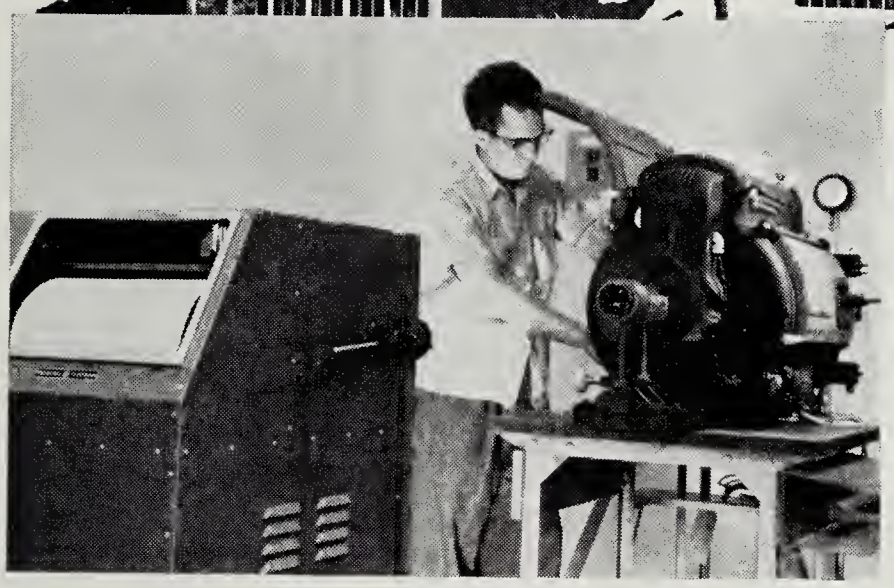
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At the outer boundaries of knowledge...

New Research Laboratories in Parma, Ohio. To expand its basic research in solid state and chemical physics, National Carbon Company has recently enlarged its staff of scientists and provided them with an ideal laboratory setup for creative work.





Studying color balance for better color movies. The spectroradiometer analyzes the complete "rainbow" of colors in projected light — to give an investigator, in one and a half minutes, information that he formerly worked half a day to get. Research like this helped National Carbon Company win the coveted "Oscar" this year for developing lighting carbons which were balanced to operate with other studio lights.

New "particle" theory promises help in developing still brighter carbon arcs

Although the high-intensity arc has been around for forty years now, nobody has yet been able to explain satisfactorily how it produces the super-bright light so useful for movie projection and studio lighting.

At one time it was thought that the brilliant light came from atomic reactions taking place within the glowing crater or pit at the tip of the positive electrode where the energy of the arc is highly concentrated. But this theory has been radically modified by researchers at National Carbon's laboratories.

Now it is believed that a much more complicated process takes place in the crater region where powerful electrical currents heat the carbon to temperatures of 10,000 to 12,000 degrees Fahrenheit, roughly the temperature of the sun's surface. According to the new "particle" theory, material from the molten floor of the crater vaporizes into tiny particles of the order of a millionth of an inch in diameter. These white-hot liquid droplets stream out into the space between the carbon electrodes of the arc to form a long, luminous tail flame or "comet tail."

Precise knowledge of this process, combined with results of other experiments now under way at the Parma laboratories, should point the way toward new, brighter lighting carbons that will stand up to higher and higher currents and temperatures. More details of the work at Parma are given in a new booklet titled "Research." Write for a copy.

Look to **NATIONAL CARBON** *for leadership in lighting carbons*

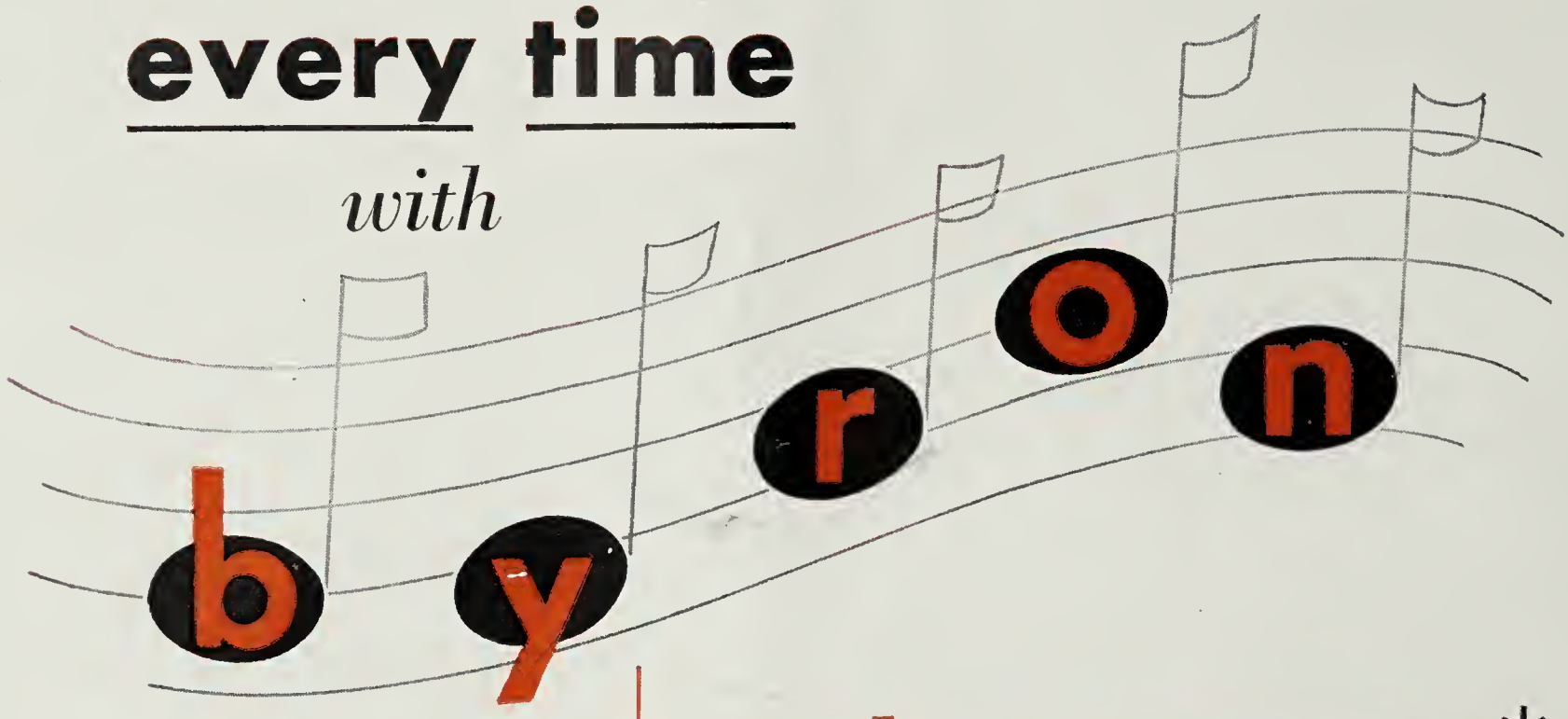
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